

EXHIBIT 1, Part 1

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10 WIRELESS INC

SUMMONS ISSUED
FILED
Superior Court of California
County of San Francisco

MAY 14 2015

CLERK OF THE COURT

BY: Elis R Deputy Clerk

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**IN THE SUPERIOR COURT FOR THE CITY
AND COUNTY OF SAN FRANCISCO**

KEVIN HALPERN & CELLURIDE
WIRELESS INC.

Plaintiffs,

v.

UBER TECHNOLOGIES INC., TRAVIS
KALANICK, GARRETT CAMP, BILL
TRENCHARD, SCOTT BELSKY, BILL
GURLEY, BENCHMARK CAPITAL,
BENCHMARK, FOUNDER
COLLECTIVE, FIRST ROUND CAPITAL,
RAISER L.L.C., RAISER CA L.L.C. and
DOES 1-250.

Defendants.

Case No. **CCC-15-545825**

- 1) Misappropriation of Trade Secrets
- 2) Conversion
- 3) Breach of Contract
- 4) Declaratory Relief

**PLAINTIFF'S VERIFIED COMPLAINT AND
DEMAND FOR JURY TRIAL**

COMPLAINT

Plaintiff Kevin Halpern (PLAINTIFF or HALPERN) and Celluride Wireless Inc.
(CELLURIDE) sometimes referred to collectively as PLAINTIFFS, by their undersigned
attorneys, allege as follows based on personal knowledge and/or on information and belief;

PARTIES TO ACTION

1. PLAINTIFF HALPERN is a male adult natural person who is a resident of

1 California. HALPERN is an entrepreneur who, in the year 2002, was the original
2 inventor of the idea, concept, coding, design, appearance, application and prototype of
3 what has now become commonly referred to as the Transportation Network Company
4 which, using evolving technologies in the mobile and cellular space including evolving
5 GPS technology on cellular phones, allows consumers to instantly locate and establish
6 contact with available transportation, directly, without the need to reserve service in
7 advance. His idea, and the related intellectual property, and technology, was developed
8 under the name Celluride.
9

- 10 2. Plaintiff is informed and believes, and on the basis of said information and belief alleges,
11 that Defendants and each of them, conspired to convert, and did convert, through
12 deception, HALPERN's work and intellectual property to themselves so as to develop,
13 create and monetize the goods and services now provided by, and to be provided in the
14 future by, the companies UBER TECHNOLOGIES INC. and RAISER CA LLC.
15
- 16 3. PLAINTIFF CELLURIDE WIRELESS INC. (CELLURIDE) is, and was all times
17 material to this Complaint, a Corporation formed under the Laws of the State of Delaware
18 registered with the California Secretary of State's office as entity number C2725147.
19
- 20 4. HALPERN is the founder of CELLURIDE and was at all times its President and Chief
21 Executive Officer, and remains as such through this present time. HALPERN transferred
22 his rights to the intellectual property, copyrights and technology he developed under the
23 name Celluride to CELLURIDE WIRELESS INC.
24
- 25 5. Defendant UBER TECHNOLOGIES INC. (UBER) is a Delaware Corporation with its
26 Principal Place of Business in San Francisco, California, which operates as a business for
27 profit.
28
6. UBER operates a transportation network company under the trade names Uber and Uber

1 X. It is also developing a logistics company with the intention to diversify the UBER
2 brand and technology into other commercial enterprises.

3 7. Defendant RAISER L.L.C. is a limited liability company which plaintiff is informed and
4 believes and on the basis of said information and belief alleges is a wholly owned
5 subsidiary of UBER.

6 8. Plaintiff is informed and believes and on the basis of said information and belief alleges
7 that UBER and/or RAISER L.L.C. operate Uber X, Uber XL and other Uber services. It
8 is also developing a logistics company with the intention to diversify the UBER brand and
9 technology into other commercial enterprises.

10 9. DEFENDANT RAISER CA. L.L.C. (RAISER CA) is a California Limited Liability
11 Company which plaintiff is informed and believes, and on the basis of said information
12 and belief alleges is wholly owned by UBER. It is also developing a logistics company
13 with the intention to diversify the UBER brand and technology into other commercial
14 enterprises.

15 10. RAISER CA L.L.C. operates Uber X and Uber XL and other services through the UBER
16 platform. It is also developing a logistics company with the intention to diversify the
17 UBER brand and technology into other commercial enterprises.

18 11. Plaintiff is informed and believes and on the basis of said information and belief alleges
19 that UBER owns various L.L.C.s in different states throughout the United States, and
20 throughout the world, which provide Uber, Uber X, Uber XL and other Uber services and
21 which are also developing as logistics companies with the intention to diversify the UBER
22 brand and technology into other commercial enterprises. Said entities are identified as
23 DOES 61-250.

24 12. Defendant TRAVIS KALANICK (KALANICK) is an adult natural person who is, and
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1 was, at all times material to this Complaint a resident of San Francisco, California.

2 KALANICK is a self-proclaimed original co-inventor/originator of the concept of using
3 cellular technology to connect persons desiring transportation services with providers of
4 such transportation using a computer enabled smartphone application. He is not. He
5 obtained the concept unlawfully from HALPERN and CELLURIDE. At all times
6 material to this Complaint, KALANICK was/is an agent and/or employee/ and/or partner
7 and/or managing agent of UBER and DOES 61-250, their predecessors, divisions,
8 subsidies and related entities. KALANICK identifies himself as the Co-Founder of
9 UBER and UBER's CEO. KALANICK is an early investor in UBER and, as such, has
10 profited, and will profit, greatly from the UBER enterprise.
11

12 13. Defendant GARRETT CAMP (CAMP) is an adult natural person who is, and was, at all
13 times material to this Complaint a resident of San Francisco, California. CAMP is a self-
14 proclaimed original co-inventor/originator of the concept of using cellular technology to
15 connect persons desiring transportation services with providers of such transportation
16 using a computer enabled smartphone application. He is not. At all times material to this
17 Complaint, CAMP was/is an agent and/or employee/ and/or partner and/or managing
18 agent of UBER and DOES 61-250, their predecessors, divisions, subsidies and related
19 entities. CAMP identifies himself as a Founder of UBER and is UBER's Chairman.
20 CAMP is an early investor in UBER and, as such, has profited, and will profit, greatly
21 from the UBER enterprise.
22

23 14. Defendant BILL TRENCHARD (TRENCHARD) is an adult natural person who is, and
24 was, at all times material to this Complaint a resident of Mill Valley, California.
25 TRENCHARD was the Founder of LiveOps, a virtual call center that provided call center
26 services to companies utilizing independent contractors who could work from their own
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1 homes via computer. TRENCHARD was a Founder of Defendant FOUNDER
2 COLLECTIVE and is a Partner at Defendant FIRST ROUND CAPITAL. TRENCHARD
3 was and/or is at all times relative to the Complaint an agent and/or employee and/or
4 partner of and/or founder and/or managing agent of FOUNDER COLLECTIVE and
5 FIRST ROUND CAPITAL. PLAINTIFF is informed and believes and on the basis of
6 said information and belief alleges that TREHCHARD originally invested his own
7 money, and subsequently invested funds of Defendant FOUNDER COLLECTIVE into
8 the UBER enterprise knowing that unlawfully misappropriated trade secrets were being
9 used by the other Defendants in the enterprise. TRENCHARD is an early investor in
10 UBER and, as such, has profited, and will profit, greatly from the UBER enterprise.
11

12 15. Defendant SCOTT BELSKY (BELSKY) is an adult natural person who is, and was, at all
13 times material to this Complaint, a resident of New York. BELSKY has significant
14 contacts with California and spends much time here engaged with actual or potential
15 business interests including his role as Vice President, Products, Mobile & Community at
16 Adobe. BELSKY indicates on his biography that he is an advisor to UBER.
17 (<http://www.foundercollective.com/founders-Scott-Belsky>) PLAINTIFF is informed and
18 believes and on the basis of said information and belief alleges that BELSKY originally
19 invested his own money into the UBER enterprise knowing that unlawfully
20 misappropriated trade secrets were being used by the other Defendants in the enterprise.
21 BELSKY is an early investor in, and has publically stated that he acts as an official
22 advisor to UBER and, as such, has profited, and will profit, greatly from the UBER
23 enterprise.
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26 16. Defendant BILL GURLEY (GURLEY) is an adult natural person who is, and was, at all
27 times material to this Complaint, a resident of the state of California. GURLEY is a
28 General Partner at Defendant BENCHMARK CAPITAL and/or BENCHMARK.

1 Plaintiff is informed and believes, and on the basis of said information and belief, alleges
 2 that GURLEY was, and is, at all times material to this Complaint, a resident of the State
 3 of California. GURLEY at all times material to this Complaint was and/or is a founder
 4 and/or agent and/or employee and/or managing agent of Defendant
 5 BENCHMARKCAPITAL and BENCHMARK. PLAINTIFF is informed and believes
 6 and on the basis of said information and belief alleges that GURLEY and BENCHMARK
 7 CAPITAL and BENCHMARK invested in the UBER enterprise knowing that unlawfully
 8 misappropriated trade secrets were being used by the other Defendants in the enterprise.
 9 GURLEY is an early investor in UBER and, as such, has profited, and will profit, greatly
 10 from the UBER enterprise.
 11

12 17. Defendant FOUNDER COLECTIVE is a “seed stage venture capital fund”, business
 13 type/form unknown, with offices in Cambridge Massachusetts and New York, New York.
 14 FOUNDER COLLECTIVE invested in the UBER enterprise knowing that unlawfully
 15 misappropriated trade secrets were being used by the other Defendants in the enterprise.
 16 FOUNDER COLECTIVE is an early investor in UBER and, as such, has profited, and
 17 will profit, greatly from the UBER enterprise.
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19 18. Defendant FIRST ROUND CAPITAL (FIRST ROUND) is a venture capital firm,
 20 business type/form unknown, that specializes in seed-stage funding to technology
 21 companies. PLAINTIFF is informed and believes and on the basis of said information
 22 and belief alleges that at all times material to this Complaint Defendant FIRST ROUND,
 23 which invested in UBER (through its Partner Rob Hayes), had its principal place of
 24 business in San Francisco California with offices in New York and Philadelphia.
 25 PLAINTIFF is informed and believes and on the basis of said information and belief
 26 alleges that FIRST ROUND invested in the UBER enterprise knowing that unlawfully
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1 misappropriated trade secrets were being used by the other Defendants in the enterprise.
2 Defendant FIRST ROUND is an early investor in UBER and, as such, has profited, and
3 will profit, greatly from the UBER enterprise.

4 19. Defendant BENCHMARK CAPITAL is a venture capital firm, business type/form
5 unknown with its principal place of business in San Francisco, California. Defendant
6 also has offices in both San Francisco and Woodside California. PLAINTIFF is informed
7 and believes and on the basis of said information and belief alleges that BENCHMARK
8 CAPITAL invested in the UBER enterprise knowing that unlawfully misappropriated
9 trade secrets were being used by the other Defendants in the enterprise. BENCHMARK
10 CAPITAL is an early investor in UBER and, as such, has profited, and will profit, greatly
11 from the UBER enterprise.
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13 20. Defendant BENCHMARK is a venture capital firm, business type/form unknown with its
14 principal place of business in San Francisco, California. Defendant BENCHMARK also
15 has offices in both San Francisco and Woodside California. . PLAINTIFF is informed and
16 believes and on the basis of said information and belief alleges that BENCHMARK
17 invested in the UBER enterprise knowing that unlawfully misappropriated trade secrets
18 were being used by the other Defendants in the enterprise. BENCHMARK is an early
19 investor in UBER and, as such, has profited, and will profit, greatly from the UBER
20 enterprise.
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22 21. FOUNDER COLLECTIVE, FIRST ROUND and BENCHMARK CAPITAL and
23 BENCHMARK shall be referred to in the collective as the "FINANCIAL ENTITY
24 DEFENDANTS."
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26 22. All defendants, collectively, shall be referred to in the collective as the DEFENDANTS.

27 23. Defendants DOES 1-250 are herein sued under fictitious names. Their true names and
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1 capacities are presently unknown to PLAINTIFF. PLAINTIFF believes that each Doe
2 Defendant is liable to PLAINTIFF as set forth herein.

3 24. PLAINTIFF is informed and believes, and thereon alleges, that DOES 1-50 are individual
4 natural persons who have acted, and who are acting, unlawfully to deprive PLAINTIFF of
5 his rights, title, and interest in his technology, copyrights, design and applications.

6 25. PLAINTIFF is informed and believes, and thereon alleges, that DOES 51-250 are
7 business entities and/or associations, of a form unknown, who have acted, and who are
8 acting, unlawfully to deprive PLAINTIFF of his rights, title, and interest in his
9 technology, copyrights, design and applications.

10 26. PLAINTIFF is informed and believes, and thereupon alleges, that there exists and at all
11 times relevant to this Complaint existed a unity of interests between certain of the
12 Defendants such that any individuality and separateness between these certain Defendants
13 has ceased and that those certain Defendants are the alter ego of other certain Defendants
14 and/or exerted control over each other. Adherence to the fiction of the separate existence
15 of these certain Defendants as an entity distinct from other certain Defendants will permit
16 an abuse of the corporate privilege and would sanction fraud and/or promote injustice.

17 27. PLAINTIFF is informed and believes, and thereon alleges, that, at all times mentioned in
18 this Complaint, DEFENDANTS were the agents and/or employees and/or partners and/or
19 joint ventures and/or founding agents of their co-defendants and in doing the things
20 alleged in this Complaint were acting within the course and scope of such agency and
21 employment and in such a manner as to ratify the conduct of their co-Defendants.

22 28. PLAINTIFF is informed and believes, and thereon alleges, that, at all times mentioned in
23 this Complaint, DEFENDANTS did aid and abet each other in engaging in the unlawful
24 actions and violations of PLAINTIFF's rights as set forth herein.

VENUE AND JURISDICTION

29. Venue is proper because PLAINTIFFS have suffered injury within the City and County of San Francisco.

30. Venue is proper because one or more the DEFENDANTS' principal places of business are located within the City and County of San Francisco.

31. Subject matter jurisdiction exists as the amount in controversy is in excess of \$25,000.00. Plaintiff is informed and believes and on the basis of said information and belief alleges that he has been injured in excess of \$1,000,000,000.00.

FACTS COMMON TO ALL COUNTS

32. HALPERN was raised in New York City, a thriving commercial center which, in the United States, has the largest private transportation infrastructure of taxis, town cars and limos. HALPERN had always observed drivers of these private vehicles sitting idly, reading and even sleeping, while there was someone just a block away who wanted to hire transportation. HALPERN realized that traditional "black car services" often had to maintain an inefficient excess supply of vehicles to meet peak consumer needs. This created significant underutilization of fixed vehicle assets during periods of low consumer demand.

33. HALPERN, seeing the inefficiency of a system that required either advanced booking of a car service, or the fortuity of having an empty cab pass by at the moment of need, had a vision to create a real-time, cellular phone based, marketplace for the supply and demand of transportation services, utilizing GPS technology therein connecting passengers who had an immediate demand for transportation to suppliers, in close proximity, who had available capacity. Based on the limitations of the traditional individualized point-to-point transportation model, providers had to employ personnel and equipment to perform

1 scheduling and dispatch of their fleet. The existing dispatch paradigm involved
2 management of assets based on location of available vehicles through time consuming,
3 often times unreliable, contacts between dispatchers and drivers to identify their real-time
4 location through individual, direct contact between dispatcher and driver. Geographic
5 management of assets, relative to their proximity to the new passenger request, relied
6 upon the ability of dispatch to keep track, mentally, of the generalized area in which
7 vehicles, completing a ride cycle (i.e. discharging a passenger) were located.
8

9 34. Another segment of the asset base of the black car service was (and continues to be)
10 comprised of individually owned, operated and insured vehicles which the owners either
11 leased to, or contracted with, fleet management systems to provide expandable fleet assets
12 in periods of high demand. These owner-operators also had their own private clients who
13 would schedule transportation service in advance, and in anticipation, of the need for such
14 transport.
15

16 35. HALPERN's vision included a dynamic pricing model which would allow for the cost of
17 transportation to respond in real-time with fluctuations in supply and demand which he
18 referred to as an "auction engine". Halpern's revenue model was to collect, 10% per ride.
19 He often referred to Celluride as the "highest potential mobile transaction." At \$100 for a
20 Town Car ride, Celluride would collect \$20.
21

22 36. Simultaneous to analyzing potential consumer demand, HALPERN undertook analysis of
23 the existing private transportation infrastructure and its methods of deployment to
24 determine compatibility of the existing fleet model with an on-demand model. This
25 included study and evaluation of evolving cellular technology and its adoption by
26 consumers and vehicle operators to determine if there was a readily available
27 infrastructure of hard assets, cellular towers and handsets, which would provide hardware
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1 to enable the use of a “peer to peer” direct connection between passengers in need of
2 immediate, real-time transportation and available drivers.

3 37. In the beginning of 2003 a research and development team began to assemble to help
4 mature the Celluride concept.

5 38. Throughout 2003 and 2004, HALPERN continued to assemble a team of leaders and
6 innovators/visionaries in the mobile technology and location application space to research
7 existing transportation logistics problems and how mobile technology could expedite
8 matching of passengers directly with drivers based upon location, price, vehicle style
9 (including the ability to preview the vehicle) and a variety of other features, which
10 previously would have to have been pre-scheduled in anticipation of the consumer need.
11 After ordering the vehicle, passengers would be able to view the vehicle moving towards
12 them in real time, on a map. This feature referred to by Halpern as “arrival awareness”
13 ensured passengers knew the exact location of their ride and its time of arrival. An
14 innovative feature was that passengers would be able to pay for their ride using their
15 phone.
16

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18 39. HALPERN, after thinking long and hard about a branding strategy, formulated a name for
19 the business enterprise: “Celluride.”

20 40. That name, Celluride, branded the enterprise by embodying the interface between the
21 technology and the service. By cross-branding the systems and service (cellular
22 technology and transportation (Cell – U – Ride)) the brand “Celluride” communicated a
23 new and fresh approach to the relationship between people and their transportation needs.
24 Instead of having to reserve transportation through a third party, passengers were
25 empowered to take control of their transportation purchase decisions. This was designed
26 to increase customer adoption through ease of use and the reduction of the dissonance
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1 associated with not knowing where your hired car was coming from, where it was in
2 transit, and when would it arrive. The direct link between passenger and provider was a
3 quantum leap forward in the private transportation industry.

4 41. On November 17, 2003, HALPERN registered the URL "celluride.com." He retains
5 ownership of that URL to this date (see EXHIBIT "A")

6 42. November 17, 2003, was the birth of what we now know as the Transportation Network
7 Company industry or what has also been referred to as both the "ride sharing industry"
8 and/or the "instant economy." HALPERN was, and remains, the forward-thinking
9 innovator who pioneered this industry.
10

11 43. Throughout the 2004 time period, HALPERN continued to develop the business model
12 and product thereby assembling a presentation which included a concept overview and a
13 demonstration of product functionality.

14 44. During 2004, HALPERN continued to study and monitor trends in cellular technology
15 including the emergence of programming applications which were being developed for
16 the rapidly expanding consumer base. These applications further enhanced the capability
17 of developing the driver/passenger interface.
18

19 45. HALPERN carefully studied the two ends of the supply-demand transportation loop
20 researching the manner in which different segments of the market executed the
21 transactional component of the transportation cycle. In doing so, he evaluated existing
22 user payment and expense tracking systems as well as transportation provider operated
23 billing and payment methods. After going to the dispatch centers and back offices of
24 many fleets and hearing about the massive cost structure of these labor intensive "back
25 office" operations, HALPERN saw additional value-added functionality that a peer-to-
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1 peer, on demand, transportation system could provide through built-in automated payment
2 and accounting services. These features reduced the costs associated with the
3 transactional element of the transaction loop and was designed to eliminate the paper
4 voucher system that was being used by both fleets and corporate customers.

5 46. By tracking developments in the cellular technology sector, HALPERN recognized the
6 benefits of carrier positioning technology that permitted a mobile device to be identified
7 and to have its position located. This development was being mandated by FCC E911
8 which required cellular carriers to develop location based services to locate the position of
9 a 911 cellular caller who, for whatever reason, could not provide their location.

10 47. The six dominant national carriers that had to invest significant financial resources to
11 develop the location based infrastructure to comply with the FCC E911 mandate sought a
12 way to monetize this investment and began developing Location Based Services (LBS).
13 These features, being added on to the mobile telephone technology, became known as
14 “applications” now commonly referred to as apps.
15

16 48. Carriers began developing separate location platform and application providers.
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18 49. AT&T Wireless launched horizontal LBS including navigation as well as location
19 identification of restaurants, movies, and other cellular users based on relational
20 positioning of the cellular phone user to the other identified location.
21

22 50. Nextel, then a major player in the cellular space, had developed approximately 10 LBS
23 apps that were available only on their Motorola cell phones. Televigation, @road, and
24 uLocal had developed two Nextel APPS being deployed for mobile resource management
25 or “friend finder” functions.

26 51. Seizing upon the developing technologies, Celluride was developed to allow any handset
27 to locate the nearest desired, available, transportation type (black car, limo, etc.).
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1 52. According to early business plans, created in 2004, Celluride v1.0 provided for GPS
 2 technology to enable drivers and passengers to identify the other parties location, travel
 3 distance, movement of the driver to the passenger's location as well as storage of the
 4 passenger and driver's profile (name, contact, account no. etc.)

5 53. HALPERN invented the concept of passenger and driver rating surveys as well as
 6 collection and display of passenger ride cancellation history.
 7

8 54. CELLURIDE's development included the capture and display of photographs of available
 9 vehicles to account for passenger preference and awareness.

10 55. CELLURIDE's initial business plan provided the following "value proposition":
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- 12 a. instant location of nearest vehicle of any class;
- 13 b. ability of passenger to view multiple vehicles in area and vehicle's proximity;
- 14 c. black car and limo pricing network;
- 15 d. no need for pre-arranged transportation - no need to be in inclement weather to hail
- 16 transportation;
- 17 e. safety enhancement through the ability to maintain driver/passenger/trip history;
- 18 f. instant payment – improved cash flow for drivers;
- 19 g. reduction of direct sales force;
- 20 h. equal ability to generate new business, through availability and driver positioning
- 21 during periods of demand, without associated marketing and advertising costs; and
- 22 i. (unlike Uber, that has failed to accommodate the disabled passenger)
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25 CELLURIDE envisioned a Celluride ParaTransit division.

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1 56. On December 6, 2004, HALPERN engaged the prestigious firm of Wilson, Sonsini,
2 Goodrich & Rosati (WSGR) to undertake legal representation of CELLURIDE for general
3 corporate matters including incorporation and securities matters.

4 57. As part the Representation Agreement with WSGR, WSGR agreed to defer up to
5 \$50,000.00 in legal fees for general corporate matters until HALPERN/CELLURIDE had
6 raised sufficient funding.

7 58. The Representation Agreement with WSGR also required that HALPERN/CELLURIDE
8 issue founder's stock to WSGR's venture capital fund, WS Investment Co. LLC, at fair
9 market value, equal to .4% of the fully-diluted capital of CELLURIDE.

10 59. In January of 2005 HALPERN incorporated CELLURIDE in Delaware. HALPERN was
11 the company's Founder, President and CEO. The Company was named Celluride Wireless
12 Inc. In March of 2005, CELLURIDE was registered with the California Secretary of
13 State's office as Entity Number C2725147.

14 60. On January 24, 2005, as per the Representation Agreement with WSGR, CELLURIDE
15 transferred 40,000 shares of common stock to WS Investment Co (see EXHIBIT "B")

16 61. HALPERN, invested \$25,000.00 into CELLURIDE.

17 62. In 2005, CELLURIDE secured additional investor financing for the new venture in the
18 amount of \$125,000.00.

19 63. In 2005, CELLURIDE had completed the system High-Level Architecture and End-to-
20 End Message Flow Process. The End-to-End Flow Process description was as follows:
21 (see EXHIBIT "C")
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- 1 1. A driver who needs to find new passengers pushes a button on his cell phone. A
2 message indicating the driver's availability and location information is sent to the
3 driver's carrier proxy server or gateway.
- 4 2. Carrier proxy determinations that this packet belongs to Celluride and forwards it
5 to Celluride's server. This packet will first be processed by Celluride's Subscriber
6 Service Engine (SSE), which authenticates the driver. Then Celluride's Location
7 Determination Engine is called to retrieve the driver's location. The local
8 determination method can be handset based or network based, depending on the
9 cell phone location technology. Finally, the driver's latest location and availability
10 information are saved in the database through the DB module.
- 11 3. A passenger looking for a ride pushes a button on his mobile handset hosting
12 Celluride's application front GUI, indicating the passenger's need for a ride. This
13 information with the passenger's location is sent to passenger's carrier proxy
14 server.
- 15 4. The carrier proxy determines that this message belongs to Celluride and forwards it
16 to Celluride's server. The server determines this message is from a passenger. It
17 then calls the SSE to authenticate the passenger, retrieves the passenger's location,
18 and calls the GIS module to find out all the drivers that are close to this passenger's
19 location. The selected drivers are further filtered by the Data Mining (DM)
20 module. The final list of drivers is those that meet the user's present criteria for
21 vehicle options.
- 22 5. The Celluride Communication Engine (CME) is invoked and the selected lists of
23 drivers are pushed back to the passenger, through the carrier proxy.
- 24 6. The carrier forwards the above message to the passenger.
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1 7. The passenger looks at this list and picks the final choice of the driver. A message
2 is generated.

3 8. The carrier proxy determines this message belongs to Celluride and forwards it.

4 9. The Celluride Server invokes SSE to log the user's transaction information and
5 saves any necessary billing information in the DB.

6 10. Celluride invokes the CME to send a notification message to the selected driver.

7 11. The carrier pushes this message to the driver's handset.

8 12. The driver either accepts or denies the request. An indication message is generated.

9 13. Carrier forwards driver's decision over to Celluride.

10 14. Celluride logs the transaction information for billing purpose and sends the routing
11 information and maps showing the driver how to get to the passenger's location.

12 15. Celluride sends a confirmation message to the passenger.

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14 64. By the end of 2005, CELLURIDE had developed and completed a cell phone
15 demonstration.

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17 65. In 2006, HALPERN completed a cell phone prototype with live GPS location on Nextel
18 devices.

19 66. In 2006, CELLURIDE began seeking to obtain additional financing to continue product
20 development.

21 67. HALPERN, a figure in the San Francisco high tech entrepreneurial community,
22 continued networking with other entrepreneurs who had successfully developed,
23 launched, operated, and in many instances sold, internet technology companies.

24
25 68. In 2006, HALPERN carefully, and selectively, continued approaching other
26 entrepreneurs who had developed successful ventures from the initial idea stage through
27 development and funding to successful launch and, in some cases, sale.
28

1 69. In July of 2006, HALPERN attended a meeting that he scheduled at the office of his
2 friend Jonathan Abrams a prominent entrepreneur, who was working on a new company
3 called Socializr. Abrams had been a software developer at Nortel and Netscape, and a
4 founder of social networking sites such as Friendster and Socializr.

5 70. Socializr was located at 25 Stillman Street in San Francisco. Socializer was the master
6 leaseholder of the second floor that had a common room and three offices off the common
7 room. One office was for Abrams, the second was for the two other Socializr employees
8 and the third office Abrams had sublet to another technology entrepreneur by the name of
9 Travis Kalanick. KALANICK paid rent to Socializr through Red Swoosh, a small peer to
10 peer technology company. At the time, KALANICK was the CEO of Red Swoosh,
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12 71. In or around July 2006, HALPERN began speaking with Defendant KALANICK about
13 his experience as an entrepreneur in funding, developing and financing a start-up
14 company. At the time, unlike the persona portrayed today of a dismissive and aggressive
15 mogul, KALANICK was an approachable fellow entrepreneur who had been humbled by
16 failure.
17

18 72. KALANICK spoke with HALPERN about how he, KALANICK, had started a company
19 called Scour which was a P2P file sharing company that had been sued by the Motion
20 Picture Association of America as well as the Recording Industry Association of America
21 for copyright violation. Like Napster, Scour was allowing users to allegedly unlawfully
22 download copyrighted films. KALANICK told HALPERN that Scour went into
23 bankruptcy and was shut down to avoid the lawsuit.
24

25 73. Defendant KALANICK also informed HALPERN that he met a billionaire on-line who
26 had invested in his company, Red Swoosh. KALANICK informed HALPERN that the
27 billionaire was Mark Cuban. Cuban, at the time, was the majority owner of the NBA
28

1 team, the Dallas Mavericks, and was a very high profile person. KALANICK said that
2 Cuban was impressed with him, because he was an expert in P2P technology.
3 HALPERN was impressed that such a high profile investor had invested in KALANICK's
4 company. HALPERN remembers this so vividly because he had never heard another
5 story how an entrepreneur in his 20's met a billionaire online. HALPERN believes
6 KALANICK mentioned it was in a chat room or online technology forum. HALPERN,
7 after hearing of KALANICK's years of P2P technology and executive experience, his
8 ability to raise capital, and the fact that he was approaching a "liquidity event," believed
9 that KALANICK could potentially form a business relationship with him and
10 CELLURIDE as an advisor, executive, or team member, to advance the Celluride
11 concept.
12

13 74. HALPERN restricted access to the information concerning CELLURIDE to those persons
14 who had a business reason to know the information and otherwise kept the information in
15 a restricted area. In discussion with KALANICK and others, HALPERN always referred
16 to the fact that his company was in "stealth mode" sharing information only when he was
17 given a promise of confidentiality and an agreement to keep the company's development
18 and trade secrets private. That is why no information exists on the internet or anywhere
19 about the details of what CELLURIDE was creating. Although HALPERN had many
20 business contacts that he had known for years, as an illustration of his desire to keep
21 CELLURIDE's development confidential, most were never informed of, nor provided
22 access to, the Celluride concept or trade secrets.
23

24
25 75. HALPERN told KALANICK that he was developing a P2P application for use in a
26 manner never before thought of.

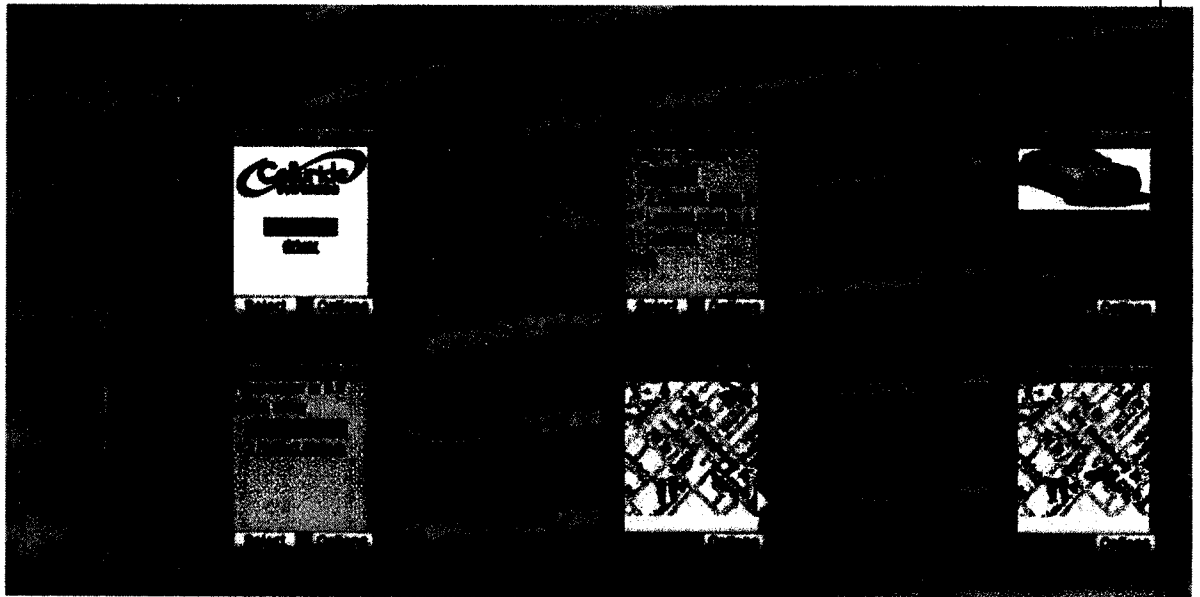
27 76. Before revealing CELURIDE's trade secrets, HALPERN obtained KALANICK's
28

1 promise that he would keep HALPERN's concept and intellectual property (Celluride)
2 confidential.

3 77. Part of the reason HALPERN trusted KALANICK was that he was someone who was in
4 Abrams' office and HALPERN had great confidence in Abrams.

5 78. Following KALANICK's assurances of confidentiality, HALPERN shared the Celluride
6 concept, described its architecture, and showed KALANICK the interface sketches and
7 designs as well as a working cell phone demo. HALPERN also gave KALANICK the
8 Celluride Brochure and showed KALANICK the Celluride slide presentation that he
9 would show investors and potential partners or team members.
10 would show investors and potential partners or team members.

11 79. Halpern also provided KALANICK with a depiction of the entire Celluride process, sketches
12 and designs as follows: (see EXHIBIT "D")
13 EXHIBIT D



24 / / / /

25
26 / / / /

1
2 80. HALPERN provided KALANICK with a visual depiction of the network interface of Celluride
3 as follows: (see EXHIBIT "E")
4 EXHBIT E



18 81. After meeting with KALANICK, HALPERN emailed KALANICK about Celluride and
19 how it was great to talk with him about the prospect of launching Celluride.

20 82. HALPERN and Defendant KALANICK kept in contact via e-mail and otherwise and, on
21 subsequent visits to Abrams' office, Halpern again spoke with KALANICK about the
22 growth and development of the product and his efforts to securing financing.

23 83. In 2006, mobile application development was early in its evolution and, as it was before
24 iPhone and Android technology had been released, the Celluride application had to be
25 customized for each device on a carrier's network. HALPERN informed KALANICK of
26 the continued efforts being undertaken to bring Celluride to market and discussed the
27 challenges with Celluride including cross-platform technological development and
28

1 attracting investors. KALANICK encouraged HALPERN to continue in his development
2 of Celluride and told him to “keep in touch.” Halpern did so.

3 84. In 2007 the iPhone was launched creating a platform which was immediately and widely
4 accepted by the public. The features of the iPhone created a tremendous opportunity for
5 the development and distribution of applications such as Celluride. HALPERN and
6 CELLURIDE planned to launch Celluride by placing the application on the iPhone,
7 directly accessible to drivers which would create efficiencies in providing private
8 transportation services.
9

10 85. Throughout 2007, HALPERN continued to see Abrams and, on occasion, KALANICK,
11 including at the club “Slide” which was/is owned, in part, by Abrams. Amongst other
12 things, they would converse about HALPERN’s continued development of the Celluride
13 technology/product.
14

15 86. Throughout 2007 HALPERN and his team continued to work on developing Celluride for
16 release as an app on the iPhone and other devices.

17 87. In mid-2007, HALPERN made contact with Defendant TRENCHARD, a fellow Cornell
18 Alumni involved within the Cornell Alumni community in the Bay Area, to seek
19 assistance and mentorship as Halpern continued to develop CELLURIDE and the
20 Celluride technology/product. Defendant TRENCHARD previously had started Jump
21 Networks (later acquired by Microsoft) and founded CallCast (which merged to become
22 LiveOps). In 2007, when TRENCHARD began communicating with HALPERN he was
23 the CEO of LiveOps. LiveOps is a cloud based contact and call center which allows
24 individuals to work from their home as part of a virtual call center. LiveOps allows
25 workers to utilize their spare time to earn income while simultaneously providing
26 companies a workforce of independent contractors without the expense of recruiting,
27
28

1 developing, and maintaining a workforce and its attendant employee related expenses.

2 LiveOps was a pioneer in the development of the distributed workforce.

3 88. HALPERN sought out TRENCHARD because he was a brilliant CEO and engineer and
4 because TRENCHARD had significant experience in developing technology and systems
5 that would allow users the ability to make their services available for hire when they were
6 being underutilized. This model of employing independent contractor's underutilized time,
7 in a flexible manner, was key to CELLURIDE's development of the driver base needed for
8 the supply side of the Celluride app.
9

10 89. HALPERN also was desirous of TRENCHARD either becoming an investor in, or helping
11 attract investors to, CELLURIDE and proposed the same to TRENCHARD in exchange for
12 equity.
13

14 90. HALPERN spent considerable time communicating with TRENCHARD in person, on the
15 phone, and through multiple email exchanges, about how CELLURIDE and the Celluride
16 product/technology was the next generation in the distributed workforce space.
17

18 91. After exchanging e-mail communication regarding CELLURIDE, HALPERN met with
19 Defendant TRENCHARD at LiveOps where he described, in detail, the Celluride concept,
20 provided him with the CELLURIDE Brochure (see EXHIBIT "F")
21 and other materials described in Paragraphs 53-55, 63, 79-80 and conducted a product
22 demonstration complete with the live maps and
23 GPS features. After confirming with TRENCHARD that CELLURIDE was in "stealth
24 mode" i.e. it was to be kept confidential, and, after TRENCHARD had gained
25 HALPERN's confidence through promises to keep HALPERN's trade secrets confidential,
26 HALPERN also emailed TRENCHARD the CELLURIDE Executive Summary
27
28

1 describing the concept, market opportunity, proposed launch plan, and profit
2 projections as well as what the company was seeking as Series A financing.

3 92. TRENCHARD continued to gain HALPERN's confidence through these interactions and
4 led HALPERN to believe that TRENCHARD was working with HALPERN to develop
5 CELLURIDE and, as a result, HALPERN continued to provide TRENCHARD with ever
6 increasing details of the Celluride concept, product and technology, as well as
7 CELLURIDE's business plans, processes, financial projections and where CELLURIDE
8 was in the development process relative to achieving launch of the app.
9

10 93. HALPERN continued to interact with Defendant TRENCHARD throughout 2007 and
11 2008 and, in the spring of 2008, HALPERN provided TRENCHARD with detailed
12 information concerning the CELLURIDE Business Plan (see EXHIBIT "G") and provided
13 details, in a spreadsheet, of product features (See EXHIBIT "H")
14 that HALPERN had spent years working on with black car fleets, drivers and corporate
15 administrators from leading investment banks and law firms that wanted to participate in
16 the beta launch of CELLURIDE's Celluride app In New York.
17

18 94. As evidence of HALPERN's confidence in Defendant TRENCHARD, in June of 2008,
19 HALPERN invited TRENCHARD to meet with potential business partners and investors.

20 95. As HALPERN continued development he also continued to approach and entice investors.
21 Throughout this period, HALPERN had met, and become familiar with, Defendant
22 GURLEY at various technology events in the Bay Area.
23

24 96. HALPERN knew GURLEY was an investor in start-up technology companies including
25 LiveOps so HALPERN informed GURLEY that he had been talking with TRENCHARD
26

27 ////
28

1 about CELLURIDE. At the time, GURLEY was also Board Member and investor in
2 OpenTable which had a similar target market/customer base, as CELLURIDE and
3 GURLEY and HALPERN spoke about potential business endeavors between
4 CELLURIDE and OpenTable.

5 97. In 2008 HALPERN showed CELLURIDE's cellphone demonstration to GURLEY
6 describing its functionality, the potential market demand, and financial potential of the
7 concept as well as the work that CELLURIDE had done on development of the demo. At
8 the time he shared these trade secrets with GURLEY, HALPERN was led to believe that
9 GURLEY would keep HALPERN's trade secrets confidential and that he would only use
10 them with HALPERN and/or CELLURIDE as a potential investor.

11
12 98. In August of 2008, another Cornell alumnus introduced HALPERN to Defendant
13 BELSKY. After several email exchanges (see EXHIBIT "I") HALPERN sent BELSKY a
14 copy of the CELLURIDE Executive Summary (See EXHIBIT "J")
15

16 99. In October, 2008, Defendant BELSKY, describing CELLURIDE as "a very interesting
17 mobile concept that could transform the way individuals and corporations order/track/
18 manage cars for transportation . . ." introduced HALPERN to others in the high-tech
19 entrepreneurial environment.
20

21 100. At all times material to this complaint, HALPERN and CELLURIDE believed that
22 TRENCHARD, KALANICK, GURLEY, BELSKY and DOES 1-50 were acting in a
23 confidential capacity with HALPERN and CELLURIDE for the purposes of developing
24 Celluride so as to timely bring it to market. KALANICK, TRENCHARD, CAMP,
25 GURLEY, BELSKY, DOES 1-50 and the related FINANCIAL ENTITY DEFENDANTS,
26 instead, unlawfully, as set forth more fully herein, defrauded HALPERN and
27 CELLURIDE, misappropriated PLAINTIFFS' trade secrets and deprived, and converted
28

1 PLAINTIFFS' property to their detriment.

2 101. On October 23, 2008 a prominent venture capitalist held an invite-only conference on the
3 Big Island of Hawaii, in Waikoloa Village, called "The Lobby". The Lobby conference
4 brought together entrepreneurs, venture capitalists, and what was then referred to as
5 "Internet 2.0 pioneers and visionaries."

6
7 102. Prior to this time HALPERN had, as part of the confidential dialogue he had undertaken
8 with TRENCHARD, reviewed and discussed, at length, detailed documentation on
9 Celluride including a Master Product Features list, detailed architecture and process flow
10 sheets, detailed business plans, a product demonstration and a Trial Launch Spreadsheet
11 which detailed how the New York City launch would be executed. HALPERN shared
12 most of this information (in confidence) with KALANICK as well. This material
13 represented over five years of HALPERN's vision and work and included HALPERN's
14 solution to having enough drivers on the Celluride platform at the time of the NYC launch
15 so that passengers would not be waiting long for their transportation and, therefore, they
16 would have the desired instant gratification associated with knowing what type of car they
17 were ordering, where that car was coming from, and confidence that their car would be
18 there quickly. An abundant supply of vehicles was (and remains) both a significant
19 hurdle, and necessary ingredient, to creating and maintaining a successful P2P
20 transportation network. HALPERN, believing that he was working in confidence with
21 TRENCHARD and KALANICK, in essence, provided a blueprint on how to launch a cell
22 phone based P2P transportation network, including how to beta test it in New York City.

23
24
25 103. Plaintiff is informed and believes and on the basis of said information and belief alleges
26 that Defendants CAMP, KALANICK, and TRENCHARD all attended the conference.

27 104. Plaintiff is informed and believes an on the basis of said information and belief alleges
28

1 that Josh Kopelman, Managing Partner of Defendant FIRST ROUND CAPITAL, and
2 Rob Hayes, Partner of FIRST ROUND CAPITAL were present also at The Lobby
3 conference. HALPERN had previously traded emails with Koppelman and Hayes.
4 Kopelman and TRENCHARD had known each other, and engaged in various business
5 endeavors for over a decade.

6
7 105. While TRENCHARD was at The Lobby conference he was in communication with
8 HALPERN, and obtained additional information from him regarding CELLURIDE's
9 development including plans to launch CELLURIDE in New York with the "Find a Ride
10 Now" feature. (see EXHIBIT "K")

11 106. Although HALPERN never publicly spoke about CELLURIDE or presented the concept
12 at any industry events, HALPERN did attend hundreds of conferences. HALPERN knew
13 hundreds of technology VC's, including the 20 primary VC's that invested in mobile
14 technology and applications. He would, without revealing the concept of Celluride, ask
15 them if they were looking at mobile transportation apps. Based upon his knowledge of the
16 technology sector, his inquiry to those in the field, and his active involvement in the Bay
17 Area entrepreneurial community, HALPERN knew no
18 one else was developing any such application besides himself.
19

20 107. HALPERN is informed and believes, and on the basis of said information and belief
21 alleges, that Defendants TRENCHARD, KALANICK, CAMP and others, including
22 agents and employees of FIRST ROUND CAPITAL conspired together at The Lobby
23 conference to unlawfully misappropriate, acquire and convert the intellectual property,
24 copyrights, trade secrets and other property rights of HALPERN and CELLURIDE.
25

26 108. HALPERN is informed and believes and in the basis of said information and belief alleges
27 that Defendants, KALANICK, TRENCHARD, CAMP, and Does 1- 10 & 75-100
28

1 created a plan to take HALPERN and CELURIDE's intellectual property and copyrights
2 and, rather than assist HALPERN and CELLURIDE in developing Celluride as they had
3 promised, they conspired to misappropriate, acquire and/or convert HALPERN and
4 CELLURIDE's property rights, technology, and copyrights to themselves and to create
5 and finance their own companies now known as UBER, RAISER L.L.C, RAISER CA
6 L.L.C. and Does 51-250.

7
8 109. KALANICK has offered many different versions of how he came up with the UBER
9 concept. Four will be listed in this complaint as examples. **VERSION ONE OF**
10 **KALANICK's MISREPRESENTATION REGARDING THE ORIGINS OF THE**
11 **P2P TRANSPORTATION (UBER) NETWORK** was published on UBER's Blog on
12 December 22, 2012. Entitled "UBER's FOUNDING," the post states; "Uber's LeWeb
13 Origins. It was a cold winter in late 2008; Garrett Camp and I were hanging out in Paris
14 for a week at Loic and Geraldine Le Meur's Le Web conference. Amongst the amazing
15 food, the copious amounts of wine and inevitable nightlife crawls there were all kinds of
16 discussions about what's next. Garrett had sold stumbleUpon to Ebay and had been doing
17 "hard time" at a big company. I had just completed my tour with Akami after selling Red
18 Swoosh to them in 2007. Jamming on ideas, rapping on what's next is what entrepreneurs
19 do. Garrett and I would get some good music, good drinks and jam until 5am. Garrett's
20 big idea was cracking the horrible taxi problem *in San Francisco* – getting stranded on the
21 streets of San Francisco is familiar territory for any San Franciscan. Garrett's m.o. fits the
22 Uber brand. He likes to roll in style, comfort and convenience. His over-the-top idea in
23 Paris that winter started as a limo timeshare service. I think his original pitch had me and
24 him splitting the costs of a driver, a Mercedes S Class, and a parking spot in a garage, so I
25 could use an iPhone app to get around San Francisco on-demand. Hilarious! Obviously
26
27
28

1 things have changed quite a bit. ☺”

2 **110. VERSION TWO OF KALANICK’S MISREPRESENTATION REGARDING THE**

3 **ORIGINS OF THE P2P TRANSPORTATION (UBER) NETWORK** was spun in his

4 2012 Le Web interview where KALANICK said:

5 (<https://www.youtube.com/watch?v=vnkvNQ2V6Og&feature=youtu.be&t=3m20s>) “We
6 came up with the idea at Le Web in 2008. We were stuck. Everybody here knows. The
7 story here is what everybody knows; *it is hard to get a cab in Paris*. In fact it may have
8 been 2008 or 2009, when I was rushing in to get on a panel and I was basically sweating, I
9 was a mess, because I couldn’t get a cab. *So Paris was the inspiration for Uber*. And so
10 we went back to SF and we created a very simple, straightforward at the time, we wanted
11 to push a button and get a ride, and we wanted it to be a classy ride.”

12
13
14 **111. VERSION THREE OF KALANICK’S MISREPRESENTATION REGARDING**

15 **THE ORIGINS OF THE P2P TRANSPORTATION (UBER) NETWORK** comes

16 from a November 2014 interview published in the December issue of San Francisco
17 Magazine, wherein KALANICK gives yet another version of the UBER myth. Indeed,
18 San Francisco Magazine recognizes the inconsistency of KALANICK’s myth stating
19 “UBER’s origin story has been revised many times: In some versions, the company
20 emerged on a mystical snowy night in Paris during an entrepreneurial jam session with
21 cofounder Garrett Camp. But if you ask Kalanick—at least, if *San Francisco* asks
22 Kalanick—it was *this city that served as the company’s true inspiration*. “The problem
23 we were solving was a very San Francisco problem, on the ground and in the streets of
24 San Francisco,” he says. “Because if you’re here and it’s before 2010, you drive
25 everywhere, even if it’s 10 minutes away. It’s a city, and you have to drive everywhere.
26 New York has 13,200 cabs or thereabouts, and S.F. has 1,500. If you were here before
27
28

2010, you could not get a cab. Kind of weird.”

[http //www.modernluxury.com/san-francisco/story/the-smartest-bro-the-room](http://www.modernluxury.com/san-francisco/story/the-smartest-bro-the-room)

112. **VERSION FOUR OF KALANICK’S MISREPRESENTATION REGARDING**

THE ORIGINS OF THE P2P TRANSPORTATION (UBER) NETWORK is

provided by KALANICK in the December 2014 issue of Vanity Fair where he stated yet another version of the myth. That is the problem with a lie, it can’t be kept straight.

“Back in their shared apartment on the outskirts of Paris, in a session that KALANICK had called the JamPad, they got to talking with some other entrepreneurs about start-up ideas. Among the many schemes bandied about was the notion for an on-demand car-service app, *inspired by their frustration in the snow*. Those who were in the room, however, said the concept that would become Uber did not stand out over other ideas discussed that evening.”

113. What is bitterly ironic is that KALANICK, a self-professed proponent of Ayn Rand’s philosophy of objectivism *has lied* to both the public and UBER investors who are not DEFENDANTS to this action about the facts surrounding the origins of UBER and, instead, has tried to re-write reality. “**Facts are facts, independent of any consciousness. No amount of passionate wishing, desperate longing or hopeful pleading can alter the facts. Nor will ignoring or evading the facts erase them: the facts remain, immutable.**” That’s one of the many problems with lies, they are impossible to keep straight. **KALANICK, TRENCHARD, CAMP and others stole not only the concept from HALPERN and CELLURIDE; they stole the entire blueprint for success and have passed it off as their own.** Now reality can no longer be escaped, DEFENDANTS must now face, and be held accountable for, the truth.

114. Tellingly, **THE REALITY OF THE ORIGIN OF THE P2P TRANSPORTATION**

1 **NETWORK NOW RUN AS UBER**, and confirmation of PLAINTIFFS' Complaint, is
 2 contained in the last statement of KALANICK's interview with Loic Le Meur in the 2012
 3 Le Web talk wherein he was asked "How about the idea: how do you get the idea?" and
 4 **KALANICK replied "You gotta have ideas and if you don't have ideas than**
 5 ***maybe you should join somebody else's idea.*"** See speech: time stamp 25:59-
 6 26:11.

7
 8 (<https://www.youtube.com/watch?v=vnkvNQ2V6Og&feature=youtu.be&t=3m20s>)

9 The truth is not only that KALANICK and other Defendant's "joined" HALPERN's idea,
 10 **they stole it.** There is nothing innovative about stealing property or credit, it is as old
 11 as time.
 12

13 115. KALANICK, CAMP, TRENCHARD, BELSKEY and GURLEY knew that HALPERN
 14 and CELLURIDE had pioneered the technology and that said technology and trade secrets
 15 had been unlawfully misappropriated from them by acts of deception in a manner that
 16 unlawfully deprived him of his many years of his labors and billions of dollars in value
 17 and revenue as can be demonstrated by the current market valuation of UBER.
 18 DEFENDANTS, and each of them, have knowingly used said misappropriated trade
 19 secrets, and/or have aided and abetted each other in the use of said misappropriated trade
 20 secrets, thereby engaging in unfair business practices so as to unjustly enrich themselves
 21 to PLAINTIFFS' detriment.
 22

23 116. Examination of the stream of investment in UBER shows how the DEFENDANTS, each
 24 of them having knowledge of the true origins and misappropriation of PLAINTIFFS'
 25 trade secrets, built and funded UBER in a "stealth mode." This was done in an effort to
 26 conceal the involvement of those who had the most direct contact with HALPERN and
 27 CELLURIDE in an effort to prevent and delay PLAINTIFFS' discovery of their activity
 28

1 so as to allow them to seek to patent HALPERN's processes and interface and to register
2 copyrights in his works including the look and feel of the user experience.

3 117. The myth of UBER is that defendant CAMP became the Founder and developer of
4 UBER, then known as Uber Cab, and that while KALANICK was gallivanting around,
5 "jamming ideas," and traveling to tech conferences, CAMP "Started working figuring out
6 what the iPhone app would look like." The iPhone app interface looks just as HALPERN
7 and CELLURIDE designed it (see e.g. paragraphs 79 & 80 *supra*) and as it appeared in
8 the various documents, brochures, images and presentations which HALPERN was
9 persuaded to share with KALANICK, GURLEY and TRENCHARD. HALPERN and
10 CELLURIDE are informed and believe, and on the basis of said information and belief
11 that KALANICK, GURLEY and TRENCHARD, then provided the various documents,
12 brochures, images and presentations to CAMP to be used for UBER's benefit.
13

14 118. KALANICK and UBER portray the evolution of the idea from that "cold winter night" (a
15 stark contrast to the actual genesis of the conspiracy on the warm sandy beaches of The
16 Lobby conference) in 2008 saying that CAMP, by March of 2009, "had started working
17 in-earnest on figuring out what the iPhone app would look like. The prototype was
18 coming along, but it was still a side project – Garrett [CAMP] had spun out StumbleUpon
19 and was now CEO again. Garrett then began a charm offensive for ramping up my
20 involvement and by that summer I joined on as Uber's Chief Incubator."
21

22 119. PLAINTIFFS are informed and believe, and on said information and belief allege, that the
23 recitation in the preceding paragraph is false. KALANICK is the engineer who had ten
24 years of experience in P2P technology. CELLURIDE was a P2P technology. Indeed, that
25 is why HALPERN had sought out, enlisted, and confided in KALANICK. HALPERN
26 expected that KALANICK would assist him and CELLURIDE to engineer, finance and
27
28

1 monetize CELLURIDE. HALPERN and CELLURIDE indicated to TRENCHARD and
2 KALANICK that he would provide an ownership interest in exchange for their
3 participation.

4 120. PLAINTIFFS are informed and believe, and on said information and belief allege, that
5 KALANICK, rather than being sought in a “charm offensive,” was actually operating
6 within UBER in a more significant role and that KALANICK has created this myth so as
7 to distance himself from the true facts and reality i.e., that he had been involved in the
8 misappropriation of HALPERN and CELLURIDE’s trade secrets. The reality is that
9 UBER has been developed by the same people who had convinced HALPERN that they
10 would work with, and help, him and CELLURIDE to develop, fund, market and monetize
11 this revolutionary P2P transportation industry. An analysis of the Founding Capitalization
12 Table of UBER will display KALANICK’s financial control of UBER from the start and
13 will crystalize the extent of his role as the puppet master of Graves despite Graves’ title as
14 CEO and CAMP’s as Chairman. KALANICK, the most experienced and operationally
15 capable of the three, as part of his effort to hide his role in UBER, had no public role or
16 voice in UBER’s launch or Angel round of \$1,250,000.

17 121. PLAINTIFFS are informed and believe, and on said information and belief, allege that
18 KALANICK, who was allegedly operating as the “lead developer,” was actually
19 operating the company as the CEO. In support of this information and belief is the fact
20 that CAMP was acting, once again, as the full time CEO of StumbleUpon (from April
21 2009 through May 2012) after CAMP had assembled a group of investors to purchase the
22 company back from eBay. CAMP has never held an operating title at UBER. HALPERN
23 contends that, having spent much time in the start-up world, organizing and attending
24 many tech conferences, there is no known documented successful tech company where
25
26
27
28

1 neither the Founder (in this case allegedly CAMP) or the Co-Founder (in this case
2 KALANICK) had an operating role in the enterprise during the development of the
3 business through the launch of the company. (CAMP has always been identified as a
4 “Founder” and the Chairman of the Board of Directors.) Instead, KALANICK, CAMP
5 and UBER, in an effort to occult KALANICK’s role with UBER “hired” Ryan Graves as
6 UBER’s “first employee”. Graves became the titular Chief Executive Officer (CEO) for
7 UBER six months prior to the company’s important launch. KALANICK was an
8 established P2P engineer with CEO/COO level experience in developing and successfully
9 launching a start-up technology company. Graves had never held an executive role and
10 was hired off the internet. KALANICK’s myth is that, after investing \$200,000.00 of his
11 own money into UBER (then Uber Cab), he entrusted the development and launch of
12 UBER, a P2P technology company, to Graves, a graduate of the Miami University (Ohio)
13 with a BA in economics. Graves’ previous experience was that of a database
14 administrator at General Electric and a 3 month internship at a startup company. He has
15 exactly zero P2P experience, had never before served in any position within the C Suite
16 and had never participated in the launch of a start-up venture. PLAINTIFFS are informed
17 and believe, and on the basis of said information and belief allege, that KALANICK, after
18 the launch, while raising funds through the Angel round of investment, was the behind the
19 scenes, de-facto, CEO/COO and was, for all intent and purposes, the one developing the
20 enterprise and product, running the business, and soliciting capital contributions from the
21 DEFENDANTS and others. Graves was a straw man used to conceal KALANICK’s role
22 from PLAINTIFFS and others who might alert PLANTIFFS about what KALANICK had
23 done with PLAINTIFFS’ trade secrets. Indeed, after launching UBER and after raising
24 the Angel round, KALANICK, knowing that raising additional funds with Graves in the
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1 position of CEO would be extremely difficult, realized that he could no longer hide his
 2 true operating role and quickly emerged as the true CEO prior to the Series A round
 3 thereby assuming the title and moving Graves to the position of Vice President,
 4 Operations. The demotion of Graves from CEO to Vice President, executed by
 5 KALANICK, shows the authority that KALANICK had within UBER. In interviews
 6 given by Graves, he has indicated that KALANICK and UBER had planned for this
 7 transition from the beginning of Grave's employment thereby confirming that
 8 KALANICK had deliberately concealed his connection to, and role within, UBER so
 9 HALPERN would not find out about it.

11 122. The CELLURIDE business plan and marketing strategy, shared with one or more of the
 12 DEFENDANTS, planned a beta launch in New York City after CELLURIDE had
 13 identified several transportation companies (supply side), and several large investment
 14 and law firms (demand side), which would support the launch. Indeed, HALPERN's
 15 October 29, 2008 email to TRENCHARD, sent while TRENCHARD was with
 16 KALANICK at The Lobby, contained not only detailed specifications and business plans
 17 but, also the plan for the NYC Launch. The transmission included the following
 18 statement; "For our launch in NYC, we are partnering directly with the owner drivers in
 19 NYC and now don't have to fully integrate fleets dispatch systems. Almost (sic) every
 20 driver in NYC owns their vehicle."

23 123. KALANICK in his written tale of UBER states "by January 2010 we did our first test
 24 run in New York." PLAINTIFFS are informed and believe and on the basis of said
 25 information and belief allege this is further evidence of the misappropriation of
 26 PLAINTIFFS' business plans. **The trade secrets which TRENCHARD and the other**
 27 **defendants had unlawfully misappropriated had laid the groundwork for a launch in**
 28

1 **NEW YORK.** Neither KALANICK nor CAMP had a close connection with Manhattan
 2 of the type that HALPERN, a New Yorker, did. KALANICK, born and raised in Los
 3 Angeles, is a graduate of UCLA and a long term resident of San Francisco where he
 4 developed his prior startup, Red Swoosh. CAMP born and raised in Canada, is a graduate
 5 of the University of Calgary, and developed his prior company, StumbleUpon, in San
 6 Francisco where he remains a resident. Launching in New York was the idea that Halpern
 7 conceived of, and meticulously planned for, after many years of market research of
 8 multiple other potential launch sites. UBER's launch in NYC it is yet another part of the
 9 theft of PLAINTIFFS' trade secrets by KALANICK, UBER and other DEFENDANTS.
 10

11 124. PLAINTIFFS are informed and believe, and on said information and belief allege, that as
 12 part of the unlawful acts alleged herein, Defendants KALANICK, BELSKY,
 13 TRENCHARD, DOES 1-10, FOUNDER COLLECTIVE, FIRST ROUND,
 14 BENCHMARK, BENCHMARK CAPITAL and DOES 51-250, furthered their unlawful
 15 enterprise through multiple rounds of investment in UBER knowingly using the
 16 misappropriation of CELLURIDE's and HALPERN's intellectual property and trade
 17 secrets to enable UBER to bypass years of research and development thereby rapidly
 18 accelerating the development and commercialization of UBER. (<https://angel.co/uber>)
 19

20 125. PLAINTIFFS are informed and believe, and on said information and belief allege, that
 21 DEFENDANTS KALANICK, TRENCHARD, BELKSY, FOUNDER COLLECTIVE
 22 and FIRST ROUND were initial investors in UBER and that they knew that UBER,
 23 KALANICK and CAMP were utilizing PLAINTIFFS' misappropriated technology.
 24

25 126. PLAINTIFFS are informed and believe, and on said information and belief allege that,
 26 Defendants KALANICK, TRENCHARD, BELKSY, FOUNDER COLLECTIVE and
 27
 28

1 FIRST ROUND continued to infuse money into the unlawful enterprise through the Series
 2 A round in which BENCHMARK CAPITAL, through the influence of its Partner,
 3 Defendant GURLEY, joined as a material investor. PLAINTIFFS are informed and
 4 believe, and on the basis of said information and belief allege that, at the time that
 5 GURLEY and BENCHMARK CAPITAL invested in UBER they were aware that UBER
 6 was utilizing misappropriated technology.
 7

8 127. PLAINTIFFS are informed and believe, and on said information and belief allege, that
 9 Defendants, KALANICK, TRENCHARD, BELSKY, FOUNDER COLLECTIVE and
 10 FIRST ROUND were joined by Defendant BENCHMARK CAPITAL and/or
 11 BENCHMARK, through the influence of its Partner, GURLEY, in the Series B and C
 12 rounds of financing and that and on the basis of said information and belief allege that, at
 13 the time that and BENCHMARK invested in UBER it was aware that UBER was utilizing
 14 misappropriated technology..
 15

16 128. Defendant UBER, and its related entities, Defendants RAISER, RAISER C.A. L.L.C.
 17 and DOES 51-250 have grown in value to a market valuation of over \$41,200,000,000.00.

18 129. DEFENDANTS, and each of them, have profited greatly from obtaining PLAINTIFFS'
 19 trade secrets through improper means.
 20

21 **FIRST CAUSE OF ACTION**
 22 **MISAPPROPRIATION OF TRADE SECRETS**
 23 **AGAINST ALL DEFENDANTS**

24 130. PLAINTIFFS repeat, and re-allege, each and every allegation set forth in this Complaint.

25 131. PLAINTIFFS owned the trade secrets that were developed by HALPERN, and
 26 transferred to CELLURIDE relating to the P2P transportation arrangements scheduled,
 27 executed and billed through a cellular phone based application. This includes but is not
 28 limited to that information identified in Paragraphs 53-55, 63 and 79-80 (the Information

1 and Procedures).

2 132. This Information and Procedures were secret and PLAINTIFFS took appropriate steps to
3 maintain the secrecy of the trade secrets involved with CELURIDE's creation and
4 development of Celluride.

5 133. PLAINTIFFS' trade secrets and Information and Procedures, had actual or potential
6 independent economic value, as demonstrated by the \$40,563,000,000.00 valuation of
7 UBER, and, as such, were valuable to PLAINTIFFS and their predecessor HALPERN and
8 to DEFENDANTS who acquired/misappropriated them.

9
10 134. Plaintiff CELLURIDE and its predecessor, HALPERN expended significant effort in
11 both time and money to develop the Information and Procedures.

12 135. The trade secrets, Information and Procedures were not easily acquired or duplicated by
13 others.

14 136. DEFENDANTS improperly misappropriated and/or disclosed PLAINTIFFS' trade
15 secrets through misrepresentation and the use of other improper means to acquire
16 knowledge of such trade secrets, and/or by deriving said trade secrets, from persons who
17 had utilized improper means to acquire them. The disclosure and/or use of PLAINTIFFS'
18 trade secrets was done without the express or implied consent of the PLAINTIFFS.

19
20 137. DEFENDANT's actions, as described above, constitute unlawful acquisition and/or
21 misappropriation and/or use of PLAINTIFFS predecessor's and PLAINTIFFS' trade
22 secrets, namely, the Information and Procedures.

23
24 138. As a result of the DEFENDANT's acquisition/misappropriation PLAINTIFFS have been
25 harmed and have suffered damages in excess of \$1,000,000,000.00.

26 139. DEFENDANTS' actions described above have at all times relevant to this action been
27 willful and/or knowing.
28

1 140. DEFENDANTS' acquisition/misappropriation of PLAINTIFF's trade secrets was a
 2 substantial factor in causing PLAINTIFFS' harm.

3 141. As a direct and proximate result of DEFENDANTS' actions alleged above,
 4 PLAINTIFFS have no adequate legal remedy, have been irreparably injured, and have
 5 suffered monetary damages in an as yet undetermined amount.

6 142. Pursuant to California Civil Code Section 3426.2, PLAINTIFFS seek an injunction
 7 against DEFENDANTS continued use of their misappropriated trade secrets.

8 143. PLAINTIFFS seek actual damages in an amount to be determined at trial.

9 144. PLAINTIFFS seek disgorgement of DEFENDANTS' unjust enrichment obtained
 10 through the misappropriation of his trade secrets and/or other damages/royalties as
 11 provided for in California Civil Code Section 3426.3(b).

12 145. DEFENDANTS' misappropriation was fraudulent, oppressive, malicious and/or willful
 13 and was ratified by the other DEFENDANTS, therefore, PLAINTIFFS seek exemplary
 14 damages including, but not limited to, those provided by California Civil Code Sections
 15 3426.3 and 3294.

16 146. PLAINTIFFS seek reasonable attorney's fees and costs pursuant to California Civil Code
 17 Section 3426.4.

18
 19
 20 **SECOND CAUSE OF ACTION**
 21 **CONVERSION**
 22 **AGAINST ALL DEFENDANTS**

23 147. PLAINTIFFS repeat, and re-allege, each and every allegation set forth in this Complaint.

24 148. PLAINTIFF HALPERN was the inventor of the P2P transportation industry now known
 25 commonly as the ridesharing industry or TNC and, more specifically, that technology
 26 which was converted by the DEFENDANTS to their own use and benefit as the TNC app
 27 UBER.
 28

1 149. PLAINTIFFS' work in CELLURIDE's creation and development, including plaintiff's
2 development of the sketches, designs, technology, business plans and other proprietary
3 information, were original works of authorship as defined by California Civil Code
4 Section 980 and otherwise.

5 150. PLAINTIFFS owned possessed and/or were entitled to immediate possession at the time
6 of conversion, certain property, assets, and profits associated with CELLURIDE.

7 151. DEFENDANTS have, jointly and severally, intentionally and wrongfully aided and
8 abetted others in, taking possession of, transferred, and/or appropriated PLAINTIFFS
9 ownership and rights of exclusive possession and use of their property and the associated
10 profits and/or assets without PLAINTIFF'S permission and against his interests.

11 152. Following conversion of PLAINTIFFS' property DEFENDANTS KALANICK,
12 GURLEY and UBER have represented the property to be theirs without credit or
13 compensation given to PLAINTIFFS.
14

15 153. DEFENDANTS CAMP, BELSKY, BENCHMARK, BENCHMARK CAPITAL, FIRST
16 ROUND CAPITAL, FOUNDER COLLECTIVE, DOES 1-250 did aid and/or abet and/or
17 ratify the conduct of DEFENDANTS KALANICK, as a founder/agent of UBER, and
18 TRENCHARD as a founder/agent/partner of FOUNDER COLLECTIVE and/or FIRST
19 ROUND CAPITAL, and DOES 1-10 & 51-60 and, as such, are liable as principals for the
20 damages they have caused
21

22 154. DEFENDANTS have monetized the converted assets and are reported to be generating
23 gross daily revenues in excess of \$20,000,000.00 through the UBER network of
24 transportation providers with a market valuation of UBER currently being above
25 \$41,200,000,000.00.
26

27 155. PLAINTIFFS have suffered special, economic, damages as a result of the conversion of
28 PLAINTIFFS have suffered special, economic, damages as a result of the conversion of

1 their property in an amount believed to be in excess of 1,000,000,000.00 dollars.

2 156. Plaintiff HALPERN has suffered general, non-economic, damages as a result of the
3 conduct of the DEFENDANTS and each of them as referenced above in an amount to be
4 determined as of the time of trial.

5 157. The conduct by the DEFENDANTS and each of them was fraudulent, oppressive and
6 malicious and/or was ratified by each of the other DEFENDANTS and as such constitutes
7 the basis for the award of punitive damages pursuant to California Civil Code 3294.
8

9 **THIRD CAUSE OF ACTION**
10 **BREACH OF CONTRACT**
11 **AGAINST ALL DEFENDANTS**

12 158. PLAINTIFFS repeat and re-allege each and every allegation set forth in this Complaint.

13 159. The actions of KALANICK, as a founder/agent of UBER, and TRENCHARD as a
14 founder/agent/partner of FOUNDER COLLECTIVE and/or FIRST ROUND CAPITAL,
15 and DOES 1-10 & 51-60 as described above constitute breach of actual or implied
16 contract.

17 160. The actions of KALANICK, as a founder/agent of UBER, and TRENCHARD as a
18 founder/agent/partner of FOUNDER COLLECTIVE and/or FIRST ROUND CAPITAL,
19 and DOES 1-10 & 51-60 actions described above have at all times relevant to this action
20 been willful and/or knowing.

21 161. DEFENDANTS GURLEY, CAMP, BELSKY, BENCHMARK, BENCHMARK
22 CAPITAL, FIRST ROUND CAPITAL, FOUNDER COLLECTIVE, DOES 11-50 and
23 61-250 did aid and/or abet and/or ratify the conduct of DEFENDANTS KALANICK, as a
24 founder/agent of UBER, and TRENCHARD as a founder/agent/partner of FOUNDER
25 COLLECTIVE and/or FIRST ROUND CAPITAL, and DOES 1-10 & 51-60 and, as such,
26 are liable as principals for the damages they have caused.
27
28

1 162. As a direct and proximate result of the actions of KALANICK, as a founder/agent of
 2 UBER, and TRENCHARD as a founder/agent/partner of FOUNDER COLLECTIVE
 3 and/or FIRST ROUND CAPITAL, and DOES 1-250 as alleged above, PLAINTIFFS
 4 have suffered monetary damages in an as yet undetermined amount in excess of
 5 \$1,000,000,000.

6
 7 **FOURTH CAUSE OF ACTION**
DECLARATORY RELIEF

8 163. PLAINTIFFS repeats and re-allege each and every allegation set forth in this Complaint

9 164. There exists an actual controversy among PLAINTIFFS and all DEFENDANTS as to
 10 their respective rights and interests in the technology and UBER app. and the profits
 11 derived therefrom.
 12

13 165. PLAINTIFFS seek a judicial determination regarding these claimed respective rights and
 14 interests in the technology and application and the profits therefrom.

15 **PRAYER FOR RELIEF**

16 WHEREFORE, Plaintiff prays for judgment against DEFENDANTS, and each of them,
 17 as follows:

18 **AS TO THE FIRST CAUSE OF ACTION**

- 19
 20 1. For compensatory damages according to proof;
 21 2. For restitution and disgorgement;
 22 3. For interest to the extent permitted by law;
 23 4. For reasonable attorney's fees and costs;
 24 5. For an award of exemplary and punitive damages;
 25 6. For equitable relief, including but not limited to imposition of a constructive trust upon
 26 all DEFENDANTS;
 27
 28

1 7. For declaratory relief of the rights and title PLAINTIFFS have over the intellectual
2 property; and

3 8. For such other and further relief as the Court may deem proper.

4 **AS TO THE SECOND CAUSE OF ACTION**

5 1. For special damages according to proof;

6 2. For general damages according to proof;

7 3. For interest to the extent permitted by law;

8 4. For an award of exemplary and punitive damages;

9 5. For equitable relief, including but not limited to imposition of a constructive trust upon
10 all Defendants;

11 6. For declaratory relief of the rights and title PLAINTIFFS have over the intellectual
12 property; and

13 7. For such other and further relief as the Court may deem proper.

14 **AS TO THE THIRD CAUSE OF ACTION**

15 1. For special damages according to proof;

16 2. For interest to the extent permitted by law;

17 3. For equitable relief, including but not limited to imposition of a constructive trust upon
18 all Defendants;

19 4. For such other and further relief as the Court may deem proper.

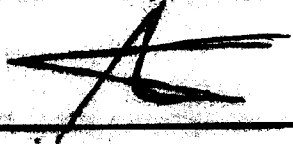
20 **AS TO THE FOURTH CAUSE OF ACTION**

21 1. A judicial determination regarding these claimed respective rights and interests in the
22 technology and application and the profits therefrom.

23 2. For equitable relief, including but not limited to imposition of a constructive trust
24 upon all Defendants;

1 3. For such other and further relief as the Court may deem proper.

2 Signed this 13th day of May, 2015

4 

5 **Christopher B. Delan M.S.M., J.D.**

The Delan Law Firm

Attorneys for Plaintiffs Kevin Halpern and Celluride Wireless Inc.

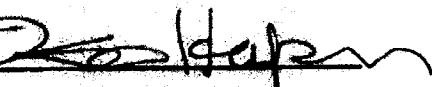
6 **VERIFICATION**

7 I am a party to this action, and I have read the foregoing Bill of Particulars and know its contents.

8 The matters stated in the Bill of Particulars are true based on my own knowledge, except as to
10 those matters stated on information and belief, and as to those matters I believe them to be true.

11 I declare under penalty of perjury under the laws of the State of California that the foregoing is
12 true and correct.

13 Executed on May 13, 2015

16
17 

18 **KEVIN HALPERN**

As an individual and as President & CEO of Celluride Wireless Inc.

20
21 **////**

23
24 **////**

EXHIBIT A



WHOIS search results for:

Domain Name: celluride.com
 Registry Domain ID: 108788621_DOMAIN_COM-VRSN
 Registrar WHOIS Server: whois.register.com
 Registrar URL: http://www.register.com
 Updated Date: 2003-11-17T05:00:00Z
 Creation Date: 2003-11-17T17:32:42Z
 Registrar Registration Expiration Date: 2015-11-17T05:00:00Z
 Registrar: Register.com, LLC.
 Registrar IANA ID: 9
 Registrar Abuse Contact Email: abuse@web.com
 Registrar Abuse Contact Phone: +1.8773812449
 Reseller:
 Domain Status: clientTransferProhibited
 Registry Registrant ID:
 Registrant Name: Kevin Helpem
 Registrant Organization: Celluride

Domain already taken?

Enter Domain Name

Search

NameMatch Recommendations

GoDaddy.com NameMatch has found similar domain names related to your search. Registering multiple domain names may help protect your online brand and enable you to capture more Web traffic, which you can then direct to your primary domain.

Domains available for new registration:

Domain	Price
<input type="checkbox"/> celluride.info	SAVE! \$2.99*/yr
<input type="checkbox"/> celluride.net	SAVE! \$9.99*/yr
<input type="checkbox"/> celluride.org	SAVE! \$8.99*/yr
<input type="checkbox"/> celluride.us	SAVE! \$4.99*/yr
<input type="checkbox"/> celluride.biz	SAVE! \$7.99*/yr
<input type="checkbox"/> celluride.mobi	SAVE! \$6.99*/yr
<input type="checkbox"/> celluride.ca	\$12.99*/yr
<input type="checkbox"/> celluride.me	SAVE! \$6.99*/yr
?	
<input type="checkbox"/> PrepaidCells.com	\$2,099.00*
<input type="checkbox"/> CellPhoneWallpapers.com	\$1,749.00*
<input type="checkbox"/> CellPhoneWallpaper.com	\$1,149.00*
<input type="checkbox"/> sitandride.com	\$10,000.00*
<input type="checkbox"/> TestDrivelyNewRide.com	\$2,895.00*
<input type="checkbox"/> DriveAndRide.com	\$1,895.00*

ADD TO CART

Domains available at Go Daddy Auctions®:

<input type="checkbox"/> <u>swinride.com</u> Ends on: 3/7/2015 11:21:00 AM PST	\$1,149.00*
<input type="checkbox"/> <u>weponride.com</u> Ends on: 3/3/2015 10:17:00 AM PST	\$1,249.00*
<input type="checkbox"/> <u>largecellcarcinoma.com</u> Ends on: 2/25/2015 10:53:00 AM PST	\$1,399.00*
<input type="checkbox"/> <u>motorcycle-ride.com</u> Ends on: 2/24/2015 9:55:00 AM PST	\$449.00*
<input type="checkbox"/> <u>celkine.com</u> Ends on: 2/23/2015 12:27:00 PM PST	\$1,199.00*
<input type="checkbox"/> <u>amusementridemanufacture.com</u> Ends on: 2/22/2015 10:28:00 AM PST	\$749.00*

VIEW LISTING

Learn more about

Private Registration



Default Registration



Business Registration



Protected Registration



The data in Register.com's WHOIS database is provided to you by Register.com for information purposes only, that is, to assist you in obtaining information about or related to a domain name registration record. Register.com makes this information available "as is," and does not guarantee its accuracy. By submitting a WHOIS query, you agree that you will use this data only for lawful purposes and that, under no circumstances will you use this data to: (1) allow, enable, or otherwise support the transmission of mass unsolicited, commercial advertising or solicitations via direct mail, electronic mail, or by telephone; or (2) enable high volume, automated, electronic processes that apply to Register.com (or its systems). The compilation, repackaging, dissemination or other use of this data is expressly prohibited without the prior written consent of Register.com. Register.com reserves the right to modify these terms at any time. By submitting this query, you agree to abide by these terms.

Registrar: REGISTER.COM, INC.
 Whois Server: whois.register.com
 Creation Date: 17-NOV-2003
 Updated Date: 28-OCT-2014
 Expiration Date: 17-NOV-2015

Nameserver: NS1.UPLINK-EARTH.COM
 Nameserver: NS2.UPLINK-EARTH.COM

Registry Status: clientTransferProhibited

See Underlying Registry Data

*Plus ICANN fee of \$0.15 per domain name year.

**CA domain names will be registered through Go Daddy Domains Canada, Inc., a CRA certified registrar.



EXHIBIT B

Wilson Sonsini Goodrich & Rosati
PROFESSIONAL CORPORATION

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represent any of the Company's parents, subsidiaries, employees, officers, directors, shareholders, or founders, or commonly owned corporations, partnerships or other entities.

3. Confidentiality.

Generally, it is in the Company's best interests to preserve the confidentiality of all communications between WSGR and the Company. If the Company discloses these communications, it jeopardizes the privileged nature of the communications, so we advise the Company not to disclose privileged information to third parties.

4. Fees, costs, and bills.

Except as provided below under item 7, by signing this letter, the Company agrees to pay all WSGR's fees and costs incurred during its work for the Company, on the terms set out in the Statement of Billing Policy.

Time-Based Billing. As a general matter, we bill for our services based on the hourly rates of the attorneys or paralegals working on any given project and the nature of the project. Our schedule of hourly rates for attorneys and other members of the professional staff is based on experience and specialization in training and practice. Our hourly rates currently range from \$80.00 for our junior paralegals to over \$675.00 for our most senior attorneys. Our fee schedules are revised periodically, usually on an annual basis. The enclosed Rate Schedule indicates our current hourly rates for attorneys and other members of our professional staff. We believe our experience and expertise in the specialized areas of corporate, corporate finance, acquisitions, regulatory, patent, intellectual property, tax, commercial litigation and securities law render our services in those areas particularly efficient.

Other Payment Arrangements. In addition, where we are engaged by you to provide legal services in connection with a significant transaction by the Company, we may request other special payment arrangements, including an advance payment or retainer at the start of the transaction, or payment in full for services rendered immediately upon completion of the transaction.

5. Costs. Often it may be necessary for us to incur expenses for items such as travel, overnight courier or messenger services and filing fees. Similarly, some matters require substantial amounts of costly ancillary services such as photocopying and computerized legal research. The enclosed Rate Schedule indicates the rates at which we charge for certain firm services. These items are separately itemized on our statements as "costs advanced," in order to allocate these expenses fairly and keep billing rates as low as possible for those matters which do not involve such

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PROFESSIONAL CORPORATION

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expenditures. Some "costs advanced" represent out-of-pocket costs, some represent an allocation of overhead costs associated with the items and others represent a combination of both factors. 'We do not bill for telephone costs.

Travel expenses by our attorneys and paralegals in connection with client matters include time spent in transit, which is normally charged at our standard hourly rates.

6. **Billings.** We will prepare our statements to describe the nature of the services rendered and the respective costs of each activity. At your request, we will break down our fees on a particular project basis. Our statements generally will be prepared and mailed during the month following the month in which services are rendered and costs advanced. We expect payment within 30 days after the statement date.

7. **Special Arrangements for Start-up Period.** We understand the particular financial needs of start-up companies and will work with you to respond to those needs. As a general matter, we will defer payment of up to \$50,000 in legal fees (but not our costs, which we would expect to be paid when invoiced) relating to the general organizational activities we perform in structuring the Company, general corporate matters, licensing matters and the pursuit of funding, or any other related activities (excluding service as litigation counsel unless agreed otherwise at the time) until the Company has received debt or equity financing or other revenue or otherwise acquired the capacity to pay. If the amount of such funding or revenue is \$1,000,000 or more, the deferred fees will be billed in full. If the amount of such funding or revenue is less than \$1,000,000, a portion of the deferred fees that may be billed, not to exceed 5% of the funding received.

In recognition of this accommodation, you have agreed on behalf of the Company to issue to the firm's affiliated venture capital fund, WS Investment Company, LLC founders' stock, at fair market value, equal to 1.0% of the fully-diluted capital of the Company (calculated immediately before completion of such debt or equity financing). This equity interest will vest monthly over two years, beginning December 1, 2004, as long as WSGR's representation of the Company continues. The equity interest will vest in full if WSGR's representation is terminated for reasons other than WSGR's willful misconduct or gross or repeated negligence. Unvested equity may be repurchased at cost within three months of the termination of services. You have also agreed to provide WS Investment Company the opportunity to purchase no less than \$50,000 in the preferred stock of the Company in each of its venture round financings, on the same terms as the principal investors. We will discuss these particular arrangements with you as part of our engagement.

8. **Termination of Representation.** Either of us may terminate WSGR's representation of the Company at any time for any reason. At the time WSGR's representation of the Company

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concludes, all unpaid fees and costs for our legal services become due and payable. If at that time the Company does not request the return of its files, WSGR will retain the Company's files for a period of five years, after which WSGR is authorized by Company to have the files destroyed without further notice to Company. In the event that Company terminates WSGR's representation of the Company or WSGR is required to withdraw from representation of the Company based on the Company's breach of this agreement (including, without limitation, failure by the Company to timely pay invoices for services performed or costs incurred by WSGR for or on behalf of the Company), the Company agrees that it will pay WSGR for any copying costs or other charges incurred by WSGR in providing copies of the files relating to WSGR's representation of the Company to the Company or its new counsel.

9. **Binding Arbitration.**

We do not anticipate having any disagreements with the Company about the quality, cost or appropriateness of our services, but if any concerns about these matters arise, please notify us immediately. We would endeavor to resolve any disagreements in a fair and amicable manner. If for some reason we were not able to resolve any dispute ourselves, then WSGR and the Company agree that all disputes or claims between us of any nature whatsoever shall be resolved by binding arbitration in the county of Santa Cruz before the American Arbitration Association or JAMS, whichever the Company prefers. This agreement includes but is not limited to disputes over the quality or appropriateness of our services, the fees and costs of our services and the Company's obligations to timely pay for our services. The arbitrator shall have power to decide all matters, including arbitrability, but must decide all disputes in accordance with California law. WSGR and the Company choose arbitration because it is usually less expensive and quicker than litigation, and it will allow them to resolve their disputes privately. The arbitrator shall allow limited discovery to enable WSGR and the Company to present their cases, but will be mindful of their mutual desire to avoid the expense of broad discovery typically allowed in civil litigation.

Notwithstanding the foregoing, either party may first submit fee disputes to the local bar association. If the bar association declines to hear a fee dispute, or if either party wishes to reject a decision by the bar association on any fee dispute, then said fee dispute shall also be resolved by arbitration as set forth above.

10. **Miscellaneous.**

This letter is the entire agreement between the Company and WSGR concerning WSGR's Legal Services to the Company. This letter is governed by California law. If any term of this letter is determined to be invalid or ineffective for any reason, the remaining terms of this letter will

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remain in force and effect. By signing this letter, the Company affirms that it understands that it is free to consult with other counsel before signing this letter about the wisdom of agreeing to the terms of the letter, including the provision for binding arbitration. The Company also affirms that it is voluntarily signing this letter. This Agreement will not take effect, and WSGR will have no obligation to provide Legal Services, until the Company returns a signed copy of this Agreement.

If the terms of WSGR's representation of the Company as explained in this letter and in the attached Billing Policy and Schedule of Rates are satisfactory, please execute the enclosed copy of this letter as indicated and return it to me in the self-addressed, stamped envelope provided. We look forward to working with you. Should you have any questions, please feel free to contact me.

Again, we are delighted at the opportunity to represent the Company. If you have any questions, please feel free to call me. Otherwise, please execute the enclosed copy of this letter and return it to me in the enclosed envelope.

Sincerely,

WILSON SONSINI GOODRICH & ROSATI
Professional Corporation



Michael J. Danaher

Enclosures

Wilson Sonsini Goodrich & Rosati
PROFESSIONAL CORPORATION

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Signature Page to Celluride Wireless Representation Letter
This letter may be signed in one or more counterparts.

ACKNOWLEDGED AND AGREED:
Celluride Wireless

By: Kevin Halpern

Title: CEO and Founder

Dated: _____, 2004

October 2004

Wilson Sonsini Goodrich & Rosati
PROFESSIONAL CORPORATION

WILSON SONSINI GOODRICH & ROSATI
BILLING POLICY

TO OUR CLIENTS:

Please review this policy carefully and discuss with your attorney any questions you may have or any special requests not covered in this material.

1. Professional Fees for Legal Services.

Our policy is to charge a reasonable fee that reflects fair value for legal services rendered. The basic factors used to determine our fees are the number of hours devoted to a matter and the hourly rates of our attorneys and legal assistants (see the attached Schedule of Rates for our fee structure). Each attorney and legal assistant is assigned a billing rate that is determined by his or her experience and expertise. These rates are reviewed annually, and an individual's rate may also change if he or she is promoted.

The amount we actually charge may be adjusted upward or downward to reflect a number of other factors, including the novelty and difficulty of the questions involved, the special skills required to perform the particular legal services properly, the size and scope of the matter, the value of the services performed, and the results obtained. We will agree with you if we propose to use a different method of billing than the time and labor costs involved and will not use a different method without your agreement.

Staffing decisions will be made with the objective of providing high-quality legal services on a basis that is both effective and economical. We are always available to discuss alternative billing arrangements.

2. Disbursements and Costs.

In addition to professional fees, we charge for expense disbursements to third parties and other costs incurred in connection with performing legal services. We will attempt to minimize these costs, consistent with client directives, time constraints, and quality requirements. Disbursements – including filing fees, court reporter fees, expert witness fees, computerized legal research, and travel – are invoiced to clients at our actual cost. We may request that any of these charges over \$500 be paid directly by the client to the third party and, on matters where significant third-party disbursements are anticipated, we may request an advance retainer from the client. Costs incurred for support services – including in-house photocopying, document preparation (only in litigation or when used in lieu of professional printing), outgoing facsimiles and delivery charges, – are billed at our estimate of their actual cost; these charges are shown on the attached Schedule of Rates.

We charge for local and out-of-town travel expenses. These expenses include time spent in transit in connection with client matters, which is charged at the standard hourly rates of our travelers. Costs for travel on client business are charged at our actual cost. Travel expenses will be reasonable and prudent and will conform to the client's travel policies.

3. Invoices and Payment.

We invoice clients monthly. Typically, invoices for a matter provide the dates of service, the attorneys and activities involved, and an itemization of disbursements and costs. We will use our best efforts to respond to requests for special invoice formats, subject to the limitations of our client-accounting software. Our invoices are due and payable upon receipt, unless other arrangements have been agreed to in advance.

SCHEDULE OF RATES

Wilson Sonsini Goodrich & Rosati
PROFESSIONAL CORPORATION

October 2004

HOURLY RATES FOR PROFESSIONAL SERVICES

Members of the Firm	\$395 to \$675 per hour
Associates	\$210 to \$400 per hour
Of Counsel/Special Counsel	\$335 to \$470 per hour
Staff & Sr. Attorneys	\$265 to \$370 per hour
Legal & Case Assistants	\$ 80 to \$235 per hour
Library Personnel	\$100 to \$180 per hour

RATES FOR SUPPORT SERVICES

Photocopying (in-office): Black & White / Color	15¢ / 30¢ per page
Document preparation (in litigation or in lieu of professional printing)	\$40 per hour
Outgoing Telecopy: Domestic / International	\$1.00 / \$2.00 per page
Delivery Services.....	Standard rates based on distance
Mileage	28¢ per mile

THIRD-PARTY DISBURSEMENTS. Disbursements to third parties are generally invoiced at our actual cost. Third-party disbursements include filing, court reporter and expert witness fees, computerized legal research, outside photocopying, investigator and consultant fees and travel. Any rebates paid to the Firm, based upon our travel volume, are used to offset the direct costs assessed us by our independent travel agency. Travel transaction fees are not charged to clients. Third-party charges in excess of \$500 may be forwarded to the client for direct payment by the client.

SUBJECT TO CHANGE. The hourly rates for professional services and the rates for support services specified above may be adjusted from time to time. Rates for professional services are generally reviewed annually. Therefore, an adjustment may occur during the course of our engagement, and the adjusted rates will automatically apply unless otherwise agreed in writing. In addition, because of special expertise, a limited number of attorneys and legal assistants may bill at hourly rates higher than those shown in the table above.

WS INVESTMENT COMPANY
Columbus Wireless, Inc.

1/24/2005

14774

WS 2004A

36,000 sh Common
@ \$0.007 (90%)

36.00

Mike Denstler
4,000 sh (10%)

4.00

WS Mandatory

Common Stock Amount

40.00



EXHIBIT C

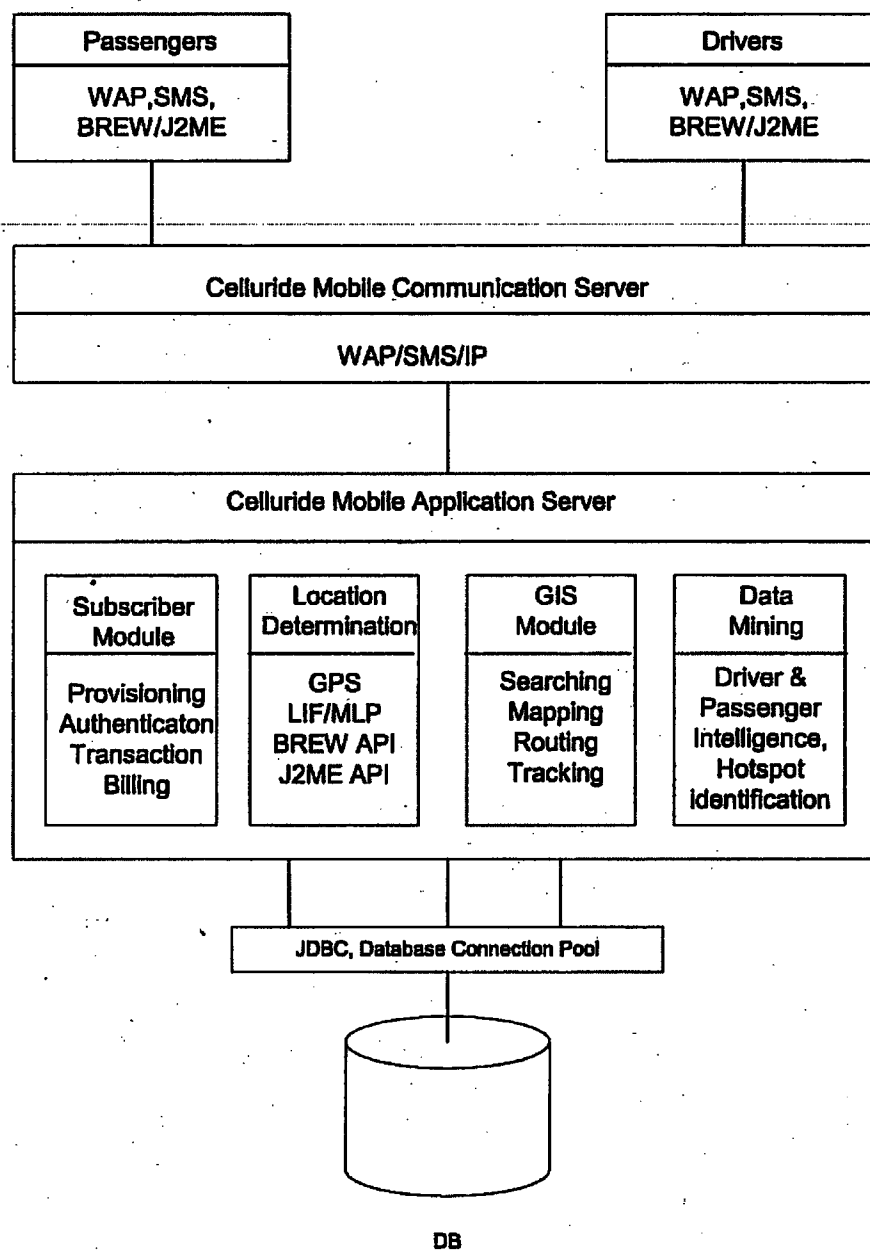


Figure 1. Celluride High-level Architecture



Subscriber Module:

Responsible for all subscriber related operation, including:

- (1) Provisioning: all subscribers need to be registered in the system to use the Celluride's service.
- (2) Authentication: authenticate an incoming subscriber's identity
- (3) Transaction: each time a Celluride transaction occurs, there will be multiple transaction states involved. All transaction details will be recorded thru this module.
- (4) Billing: handles all billing related issues. Billing can be per subscriber, per transaction, or tightly integrated with the carriers or service providers.

Location Determination Module:

Responsible for determining the x, y, z of the subscriber based on a variety of methods:

- (1) GPS: applied to a GPS-enabled device. Depending on the device's GPS output interface, location information can be fetched via standard API or reading raw GPS sentences from the communication port.
- (2) LIF/MLP: using the mobile location protocol defined by the location interoperability forum, the subscriber's location can be queried from a service provider. This is a network-centric solution.
- (3) BREW: Qualcomm's IPosDet API supports the fetching of location in a BREW-enabled handset.
- (4) J2ME: based in JSR 179 specification, the device's location can be fetched using industry-standard Java Micro Edition.

GIS Module

Responsible for all spatial data oriented operations, including:

- (1) Searching: supports the "Find Nearest" spatial searching. Identifies all drivers that are within the passenger's search radius.
- (2) Mapping: provides maps to drivers, passengers, and backend system operators.
- (3) Routing: finds the shortest path or driving direction for passengers or drivers
- (4) Tracking: the movement of passengers and drivers can be continuously tracked to ensure they are moving at the right direction or if they suddenly change course.

Data Mining Module:

An optional add-on to the base Celluride system, aiming to provide intelligence information and data mining capabilities based on the subscriber's database Celluride possess, and the patterns and statistics of subscriber's past transaction behavior and credibility.



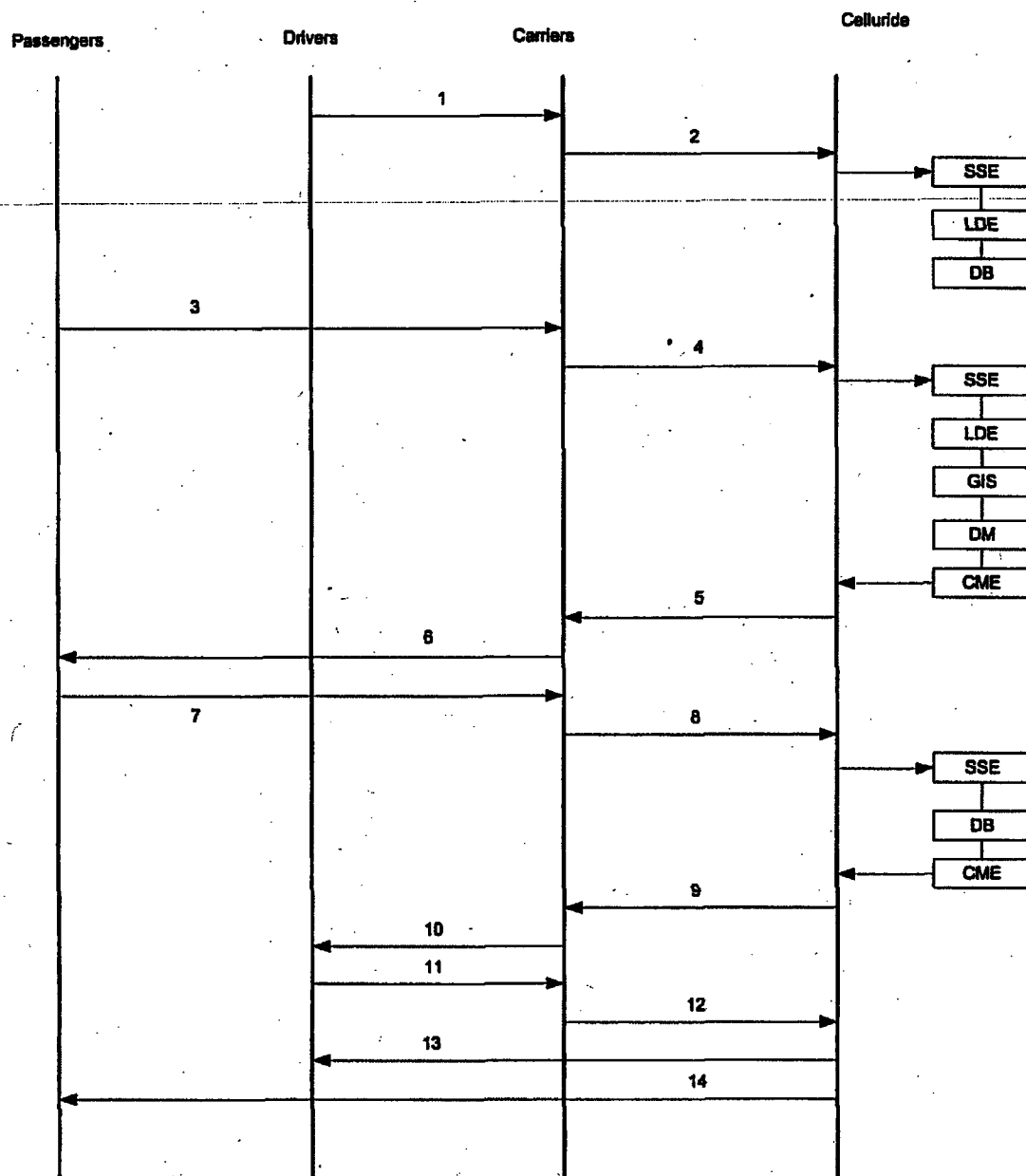


Figure 2. Celluride End-to-End Message Flow



1. A driver who needs to find new passengers pushes a button on his cell phone. A message indicating the driver's availability and location information are sent to the driver's carrier proxy server or gateway.
2. Carrier proxy determines that this packet belongs to Celluride and forwards it to Celluride's server. This packet will first be processed by Celluride's Subscriber & Service Engine (SSE), which authenticates the driver. Then Celluride's Location Determination Engine is called to retrieve the driver's location. The location determination method can be handset based or network based, depending on the cell phones location technology. Finally, the driver's latest location and availability information are saved in the database thru the DB module.
3. A passenger looking for a ride pushes a button on his mobile handset hosting Celluride's application front-end GUI, indicating the passenger's need for a ride. This information with the passenger's location is sent to passenger's carrier proxy server.
4. The carrier proxy determines that this message belongs to Celluride and forwards it to Celluride's server. The server determines this message is from a passenger. It then calls the SSE to authenticate the passenger, retrieves the passenger's location, and then calls the GIS module to find out all the drivers that are close to this passenger's location. The selected drivers are further filtered by the Data Mining (DM) module. The final list of drivers are those that meet the user's preset criteria for vehicle options.
5. The Celluride's Communication Engine (CME) is invoked and the selected lists of drivers are pushed back to the passenger, thru the carrier proxy.
6. The carrier forwards the above message to the passenger.
7. The passenger looks at this list and picks the final choice of the driver. A message is generated.
8. The carrier proxy determines this message belongs to Celluride and forwards it. The Celluride server invokes SSE to log user's transaction information and saves any necessary billing information in the DB
9. Celluride invokes the CME to send a notification message to the selected driver.
10. The carrier pushes this message to the driver's handset.
11. The driver either accepts or denies the request. An indication message was generated.
12. Carrier forwards driver's decision over to Celluride.
13. Celluride logs the transaction information for billing purpose and sends the routing information and maps showing the driver how to get to the passenger's location.
14. Celluride sends a confirmation message to the passenger.



EXHIBIT D

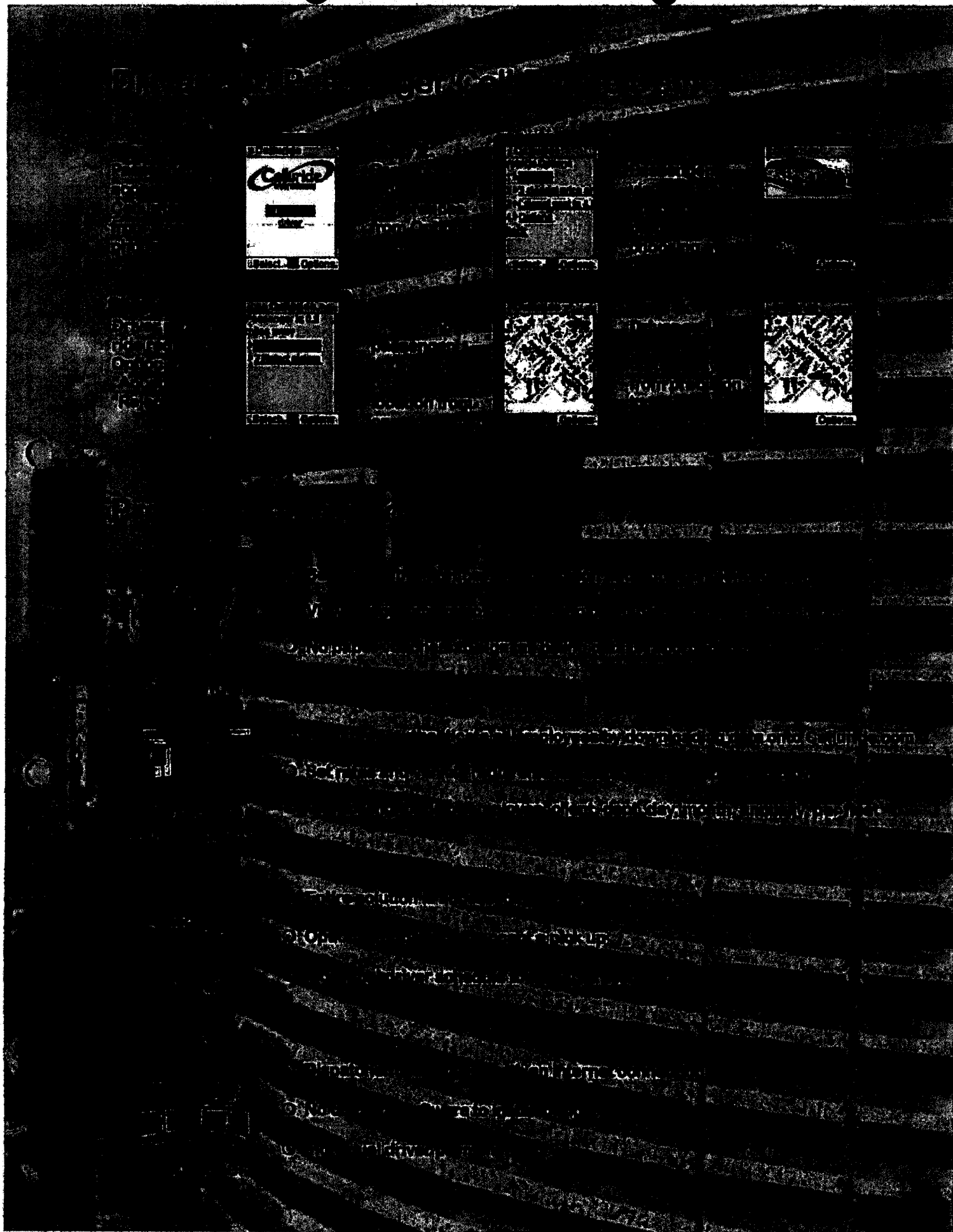


EXHIBIT E

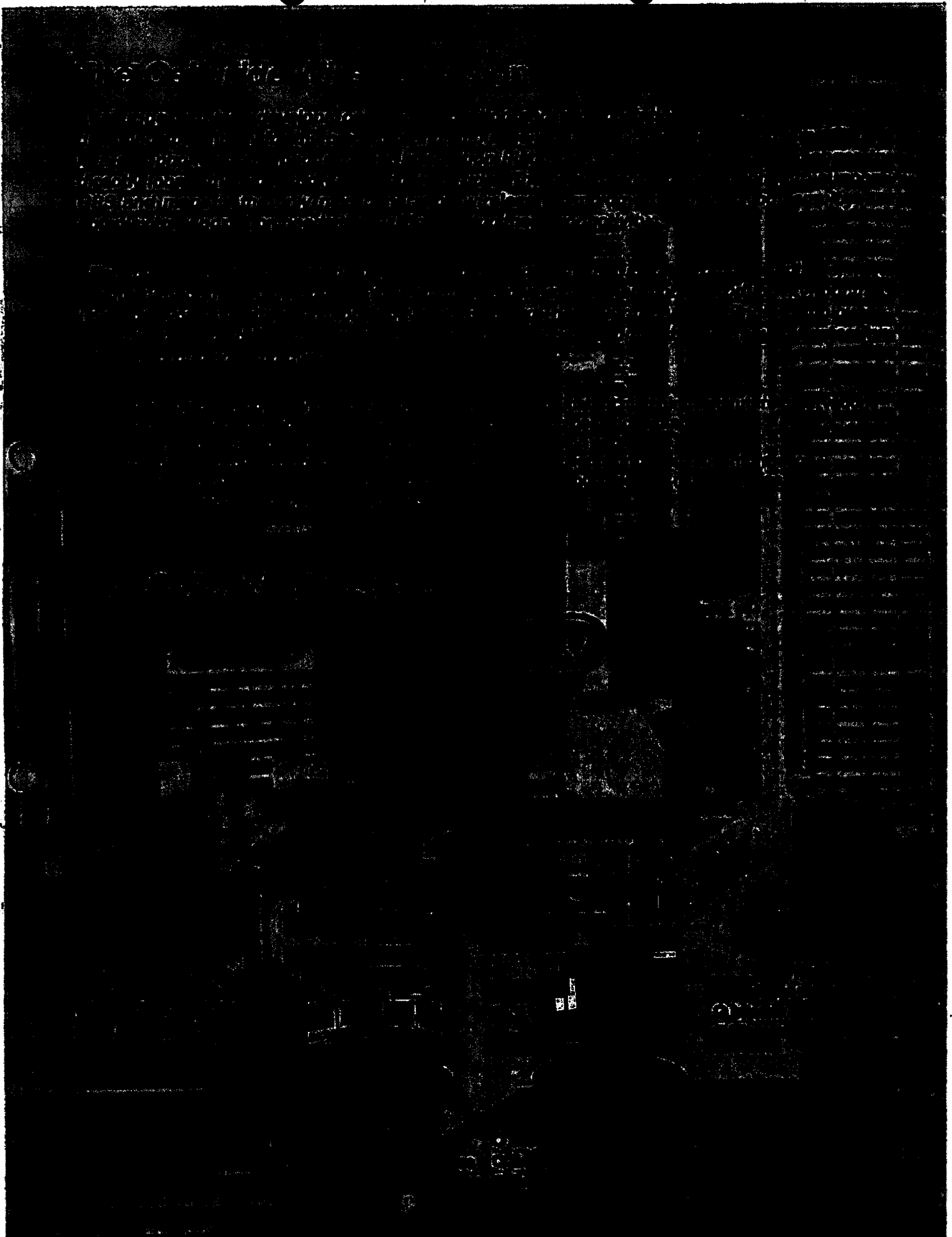
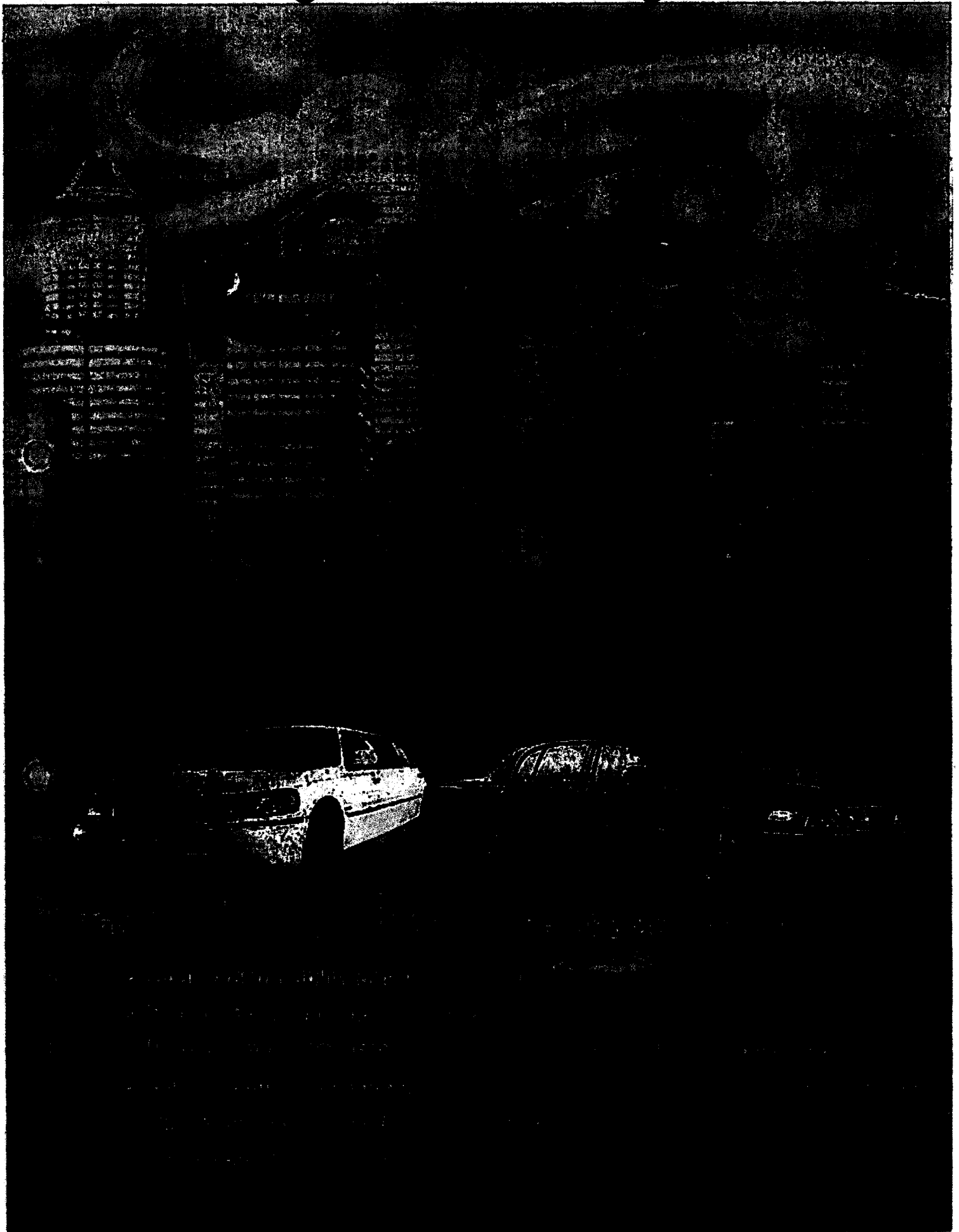


EXHIBIT F



The Cellulose Wireless Vision

Cellulose Wire is a leading provider of wireless communication solutions for the construction industry. Our products are designed to meet the unique needs of construction professionals, providing them with the tools they need to stay connected and productive on the job site. Our products are designed to be rugged, reliable, and easy to use, making them the perfect choice for construction professionals who need to stay connected in the field.

Cellulose Wire is a leading provider of wireless communication solutions for the construction industry. Our products are designed to meet the unique needs of construction professionals, providing them with the tools they need to stay connected and productive on the job site. Our products are designed to be rugged, reliable, and easy to use, making them the perfect choice for construction professionals who need to stay connected in the field.

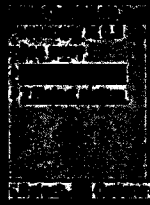
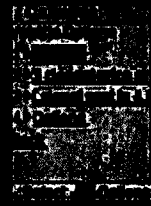
Cellulose Wire is a leading provider of wireless communication solutions for the construction industry. Our products are designed to meet the unique needs of construction professionals, providing them with the tools they need to stay connected and productive on the job site. Our products are designed to be rugged, reliable, and easy to use, making them the perfect choice for construction professionals who need to stay connected in the field.

The Cellulose [5] System

The Cellulose [5] System is a leading provider of wireless communication solutions for the construction industry. Our products are designed to meet the unique needs of construction professionals, providing them with the tools they need to stay connected and productive on the job site. Our products are designed to be rugged, reliable, and easy to use, making them the perfect choice for construction professionals who need to stay connected in the field.

The Cellulose [5] System is a leading provider of wireless communication solutions for the construction industry. Our products are designed to meet the unique needs of construction professionals, providing them with the tools they need to stay connected and productive on the job site. Our products are designed to be rugged, reliable, and easy to use, making them the perfect choice for construction professionals who need to stay connected in the field.

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EXHIBIT G



Celluride Service Platform

Technical Architecture Document

Product Celluride Service Platform

Version 0.3

Created September 27, 2005

Updated November 27, 2005

Revision History

Date	Author	Rev	Comments
09/27/05	Taspa Alagarsamy	0.1	Created
10/14/05	Taspa Alagarsamy	0.2	Updated with feedback from John, Harry & Kevin
10/25/05	Harry Niedzwiadek	0.3	Updated from CCC Architecture to Celluride Service Platform Architecture and added GIS Module details
11/27/05	Taspa Alagarsamy	0.4	Updated deployment section for details

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1. Introduction

Objective

The objective of this document is to detail the necessary information concerning the technical architecture for the Celluride Service Platform, serving all actors in the Celluride value chain. This is a living document and will evolve as the architecture is refined and extended to fulfill the requirements and changes in the business. In order to convey the full scope of the target platform, some sections may contain information that is beyond the scope of the initial release. The Celluride Project Plan contains detailed information concerning the planned implementation of the platform.

This document:

- Defines the high-level system architecture for a unified service platform to manage the Celluride business flow.
- Details the major functions/services for the system.
- Outlines the major information types for the system.
- Identifies the integration framework between major modules and components and between the platform and external systems.
- Addresses usability, scalability, performance, security and deployment considerations

Audience

This document is primarily for the Architects and Developers who are familiar with software engineering. You will also find some implementation specific details and choices that are available. The reader of this document is assumed to be knowledgeable on the UML notations (also part of Rational Unified Process). Familiarity with enterprise software will be helpful.

Conventions & Terms

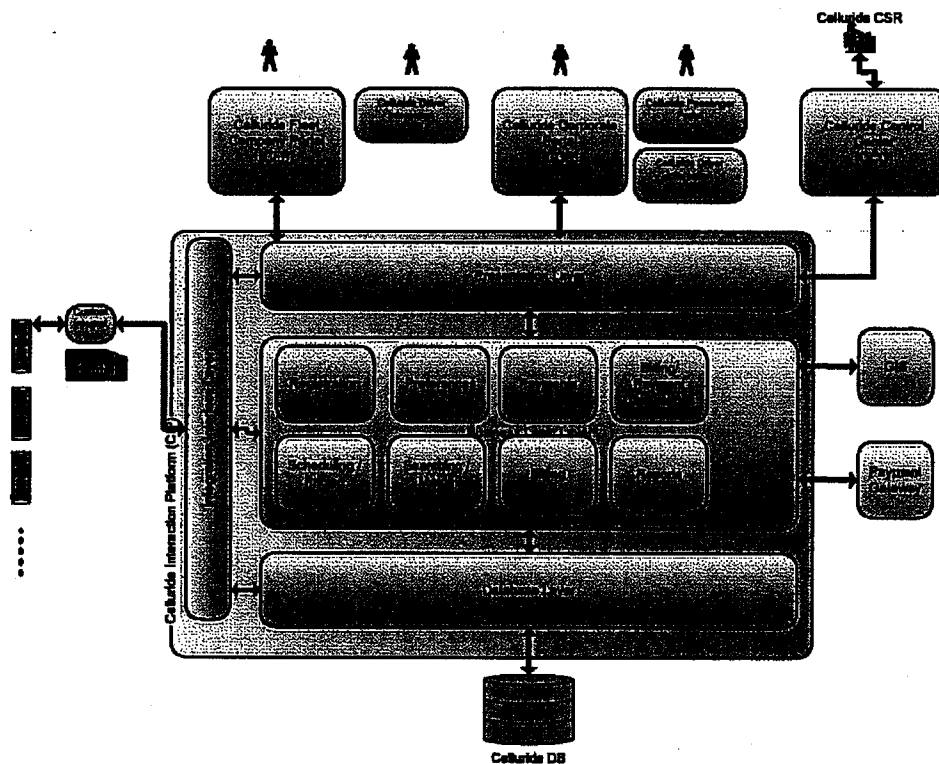
Block diagrams are used to describe the dynamic components of the system at a higher level. UML notations are used with stereotypes when needed to detail the static and dynamic structures of the system. Following are the terms and abbreviations used and shall be used in communications in order to minimize any misinterpretations.

Terms used:

- Celluride Control Center (CCC)
- Celluride Customer Portal (CCP)
- Celluride Fleet Company Portal (CFP)
- Celluride Driver Interaction/Interface (CDI)
- Celluride Passenger Portal (CPP)
- Control Center User (Celluride Employee)
- Customers
- Drivers
- Fleet Company
- Geographic Information System (GIS)
- Location-Based Services (LBS)
- Passengers
- Vehicle

2. Architecture Overview***High Level Abstraction***

Following is a high level block diagram that describes the functional elements of the Celluride platform as whole in an abstract manner. Each functional element is described in details categorized as modules in the following sections. These shall be further decomposed into the implementation level details.



Celluride - Highlevel Block Diagram (Level I)

Here are some points describing the above block diagram:

- Different interfaces will be available for each kinds of users.
- Customers and passengers will be interacting through a portal (CCP) to request for rides, payments and setting preferences etc.
- Fleet companies will be interacting through a CFP to set the availability options and pricing. They will also get information regarding the payments received.

- A web service layer will be provided for integration purposes. One such example is that which the availability / pricing can be automatically communicated from the Fleet companies.
- Search / Availability Match module is responsible for taking the ride requests (reservations) and check for the available fleets and price match.
- Schedule / Pricing module is responsible for marinating the schedules and the prices for different fleet companies that will be available to match at the time of ride requests.
- Billing / Payments module encapsulates all the billing to customers and payments to fleets. This will also contain the modules to calculate the commissions and manage the payment transactions through the control center.
- Logging module will be available log errors.

3. Control Center Module

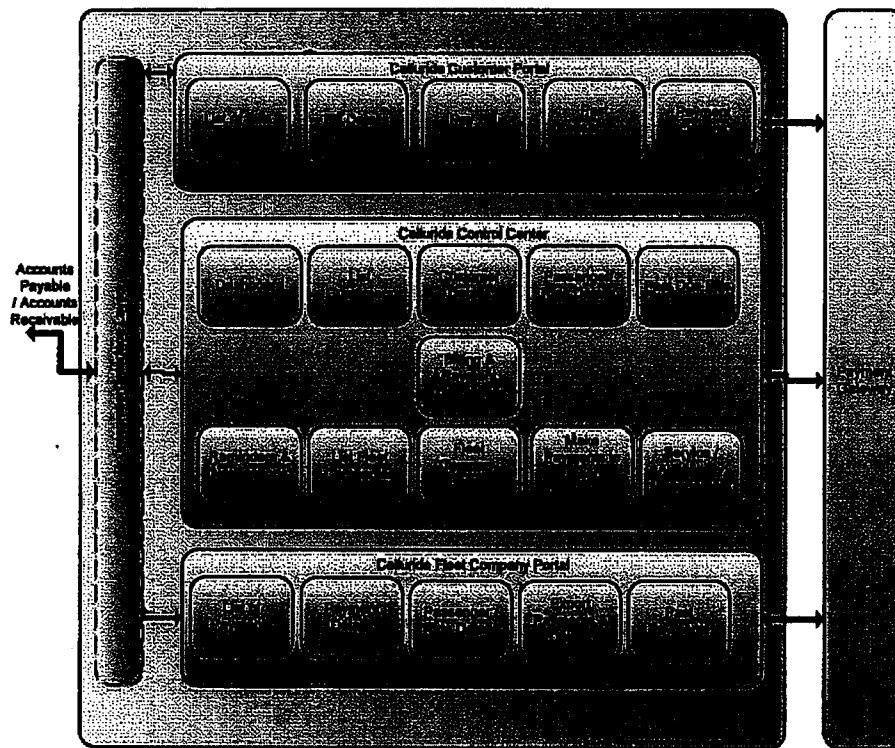
Overall the high-level architecture is described in terms of components and modules.

Further modules are categorized according to the functional groups. Going forward these can be further decomposed into class diagrams for static views and sequence diagrams for dynamic views.

Celluride Control Center is the module that provides the management of Celluride business flow. This will be mainly used internally by Celluride customer service representatives and employees. It consists of sub modules to manage Celluride customers and Fleet Companies and there by managing the transactions between them.

4. Billing & Payment Module

Following is a block diagram that shows the components that are part of billing and payment modules.



Celluride - High-level Block Diagram (Level II) - Billing & Payments

Billing & payment modules can be categorized in to three functional elements according to the targeted users. They are as under:

- Billing interface for the customer
- Payment detail interface Fleet companies
- Control center interface for managing billing and payments

Here are some details regarding each sub modules.

Billing interface for the customer:

<TBD: Info from John's prototype>

Payment detail interface Fleet companies:

Payment will be made to fleet companies by Celluride on a periodical basis. Payment calculations according to the agreement between both the parties. Further Fleet companies will be provided an interface to view the details when needed. Following are the sub modules that will be used by the Fleet companies.

- **List of Payments :** To list my current payments
- **Payment Details:** Details of each payment made such as amount breakdown and calculations.
- **Passenger Ride Details :** For each payment cycle, the list of rides can be viewed or exported for tallying
- **Export Payments & Details :** Export the details in a csv or excel format
- **Past Payments :** View all transaction history

Control center interface for managing billing and payments:

Summary page / Dashboard: When the control center user logs in, this is the startup page that s shown. This will contain summary information such as total number of customers/fleet companies/past dues etc.

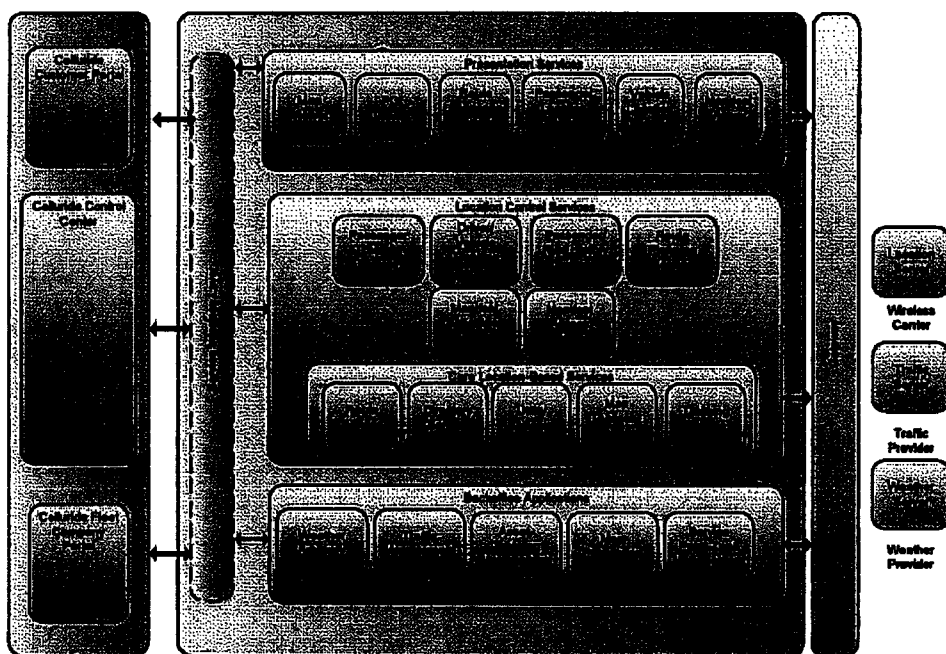
- **List of customers**
- **Customer Details**
- **Passenger / Ride Details**
- **Customer Reports**
- **List of over dues**
- **Make a payment**
- **Billing & Payment calculation options:** This will be used periodically to calculate and send bills and disburse payments.

- List of Fleet companies
- Fleet Company & Fleet details
- Fleet Reports
- List of payments made
- Payment details

5. Fleet Company Portal

6. Corporate Portal

7. GIS Module



Celluride - High-level Block Diagram (Level II) - GIS

7.1. Services

The Geographic Information System (GIS) module performs all location-based applications and services for the Celluride Service Platform. The GIS Module has three categories of functions/services:

- **Presentation services** – provide location-based content for passenger, driver, fleet, corporate and control operations.
- **Location control services** – provide location-based functions in support of Celluride service operations; includes core LBS functions.
- **Backoffice applications** – provides the location-based applications required to manage and administer location-based data.

Presentation Services

These services provide the means for all types of platform users to view and interact with location-based content.

Map Viewer – renders stylized-symbolized maps for display and interaction.

POI Viewer – renders service point and other point of interest information for viewing and interaction.

Route Guidance Service – renders route turn-by-turn directions, navigation aids and in-route progress information.

Passenger Location Service – renders detailed passenger location information; renders Passenger Location Reports.

Driver-Vehicle Location Service – renders detailed driver-vehicle location information; renders Vehicle Location Reports.

Manifest Viewer – renders manifest information for viewing; supports the ability for users to view this info in a list and/or on a map, and be able to link between the two, select entries for detail view, etc.

Location Control Services

These services create, access and revise location-based content for use throughout the system.

Passenger Tracking Service – accesses current/recent location-time-status of one or more passengers; creates Passenger Location Reports.

Vehicle Tracking Service – access to current/recent location-time-speed-status of all vehicles for one or more fleets; creates Vehicle Location Reports; also calculates and reports ETA information updates for pickups, etc.

Manifest Scheduler (Passenger-Driver Match) Service – uses location-based information for drivers and passengers and planned routes to match a driver(s) with one or more prospective passengers, and optimizing Driver Manifests in the process. Creates, accesses and revises “candidate” proposed (changes to) Driver Manifests. A match/scheduler algorithm optimizes manifests based upon passenger/driver locations, service times (pickup & drop-off locations and times) manifest schedule (i.e., available time slots), and planned (preplanned) routes (i.e., optimizes routes for “traveling salesman” situations). Thus, the match/scheduler algorithm optimizes driver downtime and passenger ride time.

Passenger/Ride History Service – accesses and updates location-based ride history information for use in future route planning and customer support purposes. Used to reduce route planning efforts for repetitive ride requests, e.g., a passenger that makes a series of service requests involving the same pickup and drop-off location-times. Also used to confirm or validate ride history in support of customer service and set/update/optimize customer preferences.

Route Planning Service – enables a Celluride operator to plan and replan routes. Replanning is (may be) necessary when conditions warrant (e.g., traffic problems, insert/delete passenger from manifest, unplanned events, etc). The idea is to normally do replanning in the CCC, through a Celluride Operator using the Tracking Management Application, not on-the-fly with the Driver. This preplanning will be done in the background so that the Driver is just driving and stepping through and working off the dynamically optimized manifest and route.

Manifest Service – creates, accesses and updates a Driver Manifest for a specified driver(s). [Note: The Manifest Service merely creates, updates and provides access to manifest data. Manifest optimization (the smarts) is accomplished through the Manifest Scheduler Service.]

Core Location-Based Services

These services are the basic building blocks for other location-based services and applications. [Note: These services correspond with the OpenLS platform standards, which are available from several vendors.]

Route Service – determines a route between two or more points.

Directory (POI) Service – accesses service points and other points of interest information that may be required for navigation.

Utility Services – performs basic geospatial utility operations, including geocoding (address→lat/long) and reverse geocoding (lat/long→address).

Map Service – accesses basic map layers used in compiling maps for presentation.

Tracking Service – accesses tracking information for passengers and drivers (i.e., location-time-speed-status).

Backoffice Applications

These applications provide management and administration capabilities in support of operations.

Traffic Management – used to monitor and report traffic conditions; creates Spot Traffic Reports.

Asset-Tracking Management – used to monitor and report the location-time-speed-status of active passengers and drivers, as well as reserve assets (vehicles and drivers); also able to access and view Driver Manifest information to determine in-route progress and progress against manifest.

Map Publication – used to import and manage geospatial data and publish all maps (create templates) from geospatial data; creates the map template with features, symbols and styles for Base Maps and any other Maps.

Service Point- Zone Management – used to import and manage directory data containing service point and other point of interest information; also used to create and manage zones (geographic areas) that are used in operations.

Weather Advisory – used to monitor and report weather conditions; creates Spot Weather Reports.

7.2. Primary Information Types

The following list contains the primary location-based information types (classes) for the system:

Base Map – contains the essential layers of geospatial data required for creating “base” maps, including hydrographic, cultural, and transportation data, etc; maps created by the

system for presentation to users would normally contain a base map with one or more overlays containing such information as routes, service points, passenger tracks, vehicle tracks, zones, etc.

Map – any rendered map presented for Celluride business operations.

Address – the street address for a location of interest (i.e., building location, street intersection).

Roads & Navigation – contains road and associated navigation data suitable as input for route planning.

Route – A planned route containing one or more stops, with associated route guidance (turn-by-turn directions and navigation aids).

Route Directions – the turn-by-turn directions for planned routes.

Navigation Aids – navigations aids that are used for guidance.

Service Points – contains information about hotels, service stations, restaurants, business centers, transportation nodes, and other points of interest suitable for route planning.

Passenger Tracks – contains passenger [location-time-status] for active passengers.

Passenger Location Report – a location-sensitive passenger location status report.

Passenger History Log – captures the ride history for passengers in terms of pickup & drop-off times, routes, drivers, etc.

Vehicle Tracks – contains driver/vehicle [location-time-speed-status] for active drivers; includes links to active routes.

Vehicle (Asset) Location Report - a location-sensitive vehicle (asset) location status report; may be used in a number of ways, including, for instance, as an alerting mechanism to indicate to a passenger that the driver's ETA at a pickup location is delayed, or as a way to indicate back to the CCC that a driver is off-duty or has an unexpected schedule delay.

Zones – any geospatial areas that are used in operations, e.g., unit areas that may be defined for use in fleet asset management and transportation planning.

Spot Weather Report – a location-sensitive weather information report; used for route planning.

Spot Traffic Report – a location-sensitive traffic information report containing such information as known accident locations, locations for streets under repair, traffic flow data; used for route planning.

Driver Manifest – the location-based information and associated passenger and driver information comprising the manifest for a driver (planned passenger pickup locations and service points, including breaks) and associated planned routes. [Note: The business logic that drives the creation, update and management of the manifest is outside the GIS Module, under CCC. However, the application uses GIS module functions extensively to create, revise, optimize, view and interact with manifest information.]

7.3. External Interfaces

Near-real time data services

Location Server – 3rd party wireless provider service to access locations of mobile terminals.

Traffic Server – 3rd party service to access local traffic information for route planning and replanning purposes.

Weather Server – 3rd party service to access local weather information for route planning and replanning purposes.

Other 3rd party data

Base Map Data – 3rd party data containing basic geospatial data required for maps.

Route & Navigation Data – 3rd party data for detailed route and navigation purposes; also contains address information.

Service Point Data – 3rd party directory information for relevant service points required for route planning and navigation.

8. Passenger / Driver Modules

<TBD: Harry, please provide some info here>

9. Scheduling / Availability Module

10. Search / Match Module

11. Reports

12. Error Handling / Notifications

- Billing notifications to Customers
- Past due notifications to Customers
- Payment notifications to Fleet companies
- User interface error handling

13. Security

Authentication

- Authentication for Customers, Fleet Companies & Control Center

Encryption

- SSL will be used for all the payment and billing activities.
- Passwords that are stored should be encrypted.
- Billing options will be stored in the Celluride database.
- Credit card information and/or banking details will be kept with the payment gateway provider and not in Celluride DB.

14. Usability

15. Scalability & Performance

- App server level clustering
- Database shadow

16. Deployment

The following are some implementation & deployment details for each categorized layer:

Presentation layer

This layer will be implemented mainly using JSPs /HTML and javascripts. Java faces will be used where necessary. This layer is responsible for rendering all the user interface elements. Apache Tomcat will be used to server the presentation pages. Targetted browser for the initial release are IE 5.0 & above, Netscape 7.0 & above.

Business logic layer

The control center's business logic will be abstracted into a middle tier and will be built as managed components. Several stateless and stateful EJB's will hold the business logic and will be available in a clustered environment. Entity beans will be used to interface with the database. This layer will be implemented using JBOSS.

Database layer

This layer abstracts the access to the underlying database. Mysql database will be used to store the data. Please refer to the Datamodel section for details

Appendix A : Open Issues / Questions

- Business model for payment and revenue generation.
- Payment gateway vs. third party billing provider - Feasibility.
-

Software & Providers List

Platform Middleware, Map Content, Navigation, UI

November 19, 2006

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ABI introduces a navigation solutions database

ABI Research has launched a navigation solutions database. It includes information on pricing, hardware and features, searchable for hundreds of navigation devices and services. According to ABI, the new database includes nearly all the world's navigation offerings. The continuously updated database can be searched by a number of identifiers, including: feature set, traffic connectivity, embedded OS, hardware characteristics, screen size, and original device manufacturer.

1. Introduction

...Purpose

This document includes software solutions and application programming interfaces to support LBS.

LBS services require access to more resources within the operator's network than just location such as subscriber validation and subscription verification and application-level billing.

Some of these solutions focus on providing tools to the wireless telecommunication carriers, while others focus on the handset manufacturer, while still others provide a suite of functions that contain geoprocessing applications and web services.

This document presents an assessment of the value chain of LBS

- Location technology vendors
- Equipment vendors
- Mobile network operators
- Handset manufacturers
- LBS middleware providers
- Content providers
- Application developers
- Portals and location data brokers

Comment: LBS middleware contain Web Services API (AA) - Advanced Application Interface for accessing common network services, such as:

- Location requests (based on MLP 3.0)
- SMS and WAP-push message delivery
- Subscriber validation and subscription verification
- Application level billing

Comments: Like Openwave Location Studio?

Comment: Will there be the navigation brokers?

2. Platform Middleware Comparison

...LBS middleware provides the following functionality (out-of-the-box):

- Provide services based on a user location
- Invoke fetching position as needed to update users' location information
- Generate queries for a user's current location, with or without heuristic refinement
- Generate proximity queries for pairs of mobile objects
- Maintain a cached list of mobile objects to monitor
- Perform periodic updates of one or many cached mobile objects to monitor
- Receive notification based on an event generated by a mobile object and its proximity to a static or other mobile object

Spatial and Relational Queries

The following spatial and relational query functions are usually supported by most LBS middlewares:

- Find all features that satisfy a custom SQL Where clause
- Find features closest to a specified location based on straight line (as-the-crow-flies) distances
- Find features closest to a specified location based on travel time or distance using a real street network
- Find closest features along a route. This could be performed on any previously generated route. For example, this search could be used to return all the gas stations along the route
- Find features closest to a specified location within a specified radius
- Find all features that contain a specified location
- Find features that are within a specified distance from a specified feature
- Find features within a specified region. This region could be comprised of the ring, ring sector, or disk sector returned from the position determination technology.
- Find closest features based on travel mode. For example, the closest ATM machine based on driving distance.

Comment: Passengers may request to stop at an ATM on the way to their drop off location. Knowing the location of an ATM will allow the driver to deliver the passenger to both locations quickly and effectively.

Some LBS middlewares come with Content Management Services that enable:

- Navigate and query a hierarchy of categorized content
- Manage a user's personal location history
- Manage a user's personal location and route bookmarks

- Interface with external systems
- Refine a location by performing spatial proximity queries

TO DO:

- see if there is difference in product offerings for web based vs cell phone based map services, tracking
- would we want to use ESRI's Tracking Server for the website app?
-

No to Kivera, Webraska, LocationNet

Kivera is now part of TeleCommunicationSystems

- Are all of these hosted?
 - o Do we want to setup our own open source server and maintain it?
 - o Which open source LBS platforms are good? GeoServer and MapServer are good GIS map servers, but are not LBS platforms, per se.
- Other LBS middleware providers that are not included in the table include:
 - o Autodesk Location Services
 - o AltaMap
 - o Cellvision (US or Europe?)
 - o Genasysw
 - o Mobilaris – NO
 - o Openwave
 - o PTV – NO
 - o Reach-U – NO
 - o Redknee – NO
 - o Telenity2 - NO
 - o Cityneo (France)
 - o MapInfo
 - o Wavemarket
 - o GeoMicro
 - o Integraph IntelliWhere
 - o OracleAS Wireless LBS platform
 - Allows to add maps, driving directions, and information from Yellow Pages to the applications.
 - o IBM WebSphere Everyplace Server LBS (requires WebSphere Application Server)

Comments: • **Tracking Server Author**—Allows users to create a tracking symbology file that contains the symbology for displaying real-time tracking services.
 • **Tracking Server Designer**—Allows users to build and customize a tracking Web site by specifying the ArcIMS image service and real-time tracking services to include in the Tracking Viewer Web site.
 • **Tracking Server Manager**—Serves as the control center for the Tracking Message Server, where users can customize settings to tailor the server's functionality to their needs.

Comments: Why not?

Comments: The platform seamlessly integrates with the operator's existing service network, their provisioning, billing, and OMAF systems.

LocationNet's powerful add-on GIS Engine supports map rendering, geo-coding and routing for all LocationNet Platform integrated LBS service applications.

In conclusion

- o Autodesk LocationLogic
- o Openwave
- o Wavemarket
- o Telcontar
- o Oracle (cheaper than going with LBS middleware / just having a db?)

Comments: powers Nextel's and Sprint's location-based services (MapPoint web services are also used by Sprint?)

Factors:

- o easy of migration? (from ESRI ArcWeb to Telcontar)
- o mobiles with GPS support (there are about 10 GPS cellular solutions as of 2005)

LBS middleware vs hosted LBS Web Services**Benefits of a hosted LBS Web Services:**

- provides content and geo capabilities without having to purchase and maintain large datasets
 - o This can result in significant savings in time, expense, and computer resources
- Ability to combine multiple services and integrate them into the application
- No need to purchase hardware or software or hire additional staff

Q: What about integration with other systems like billing, CRMs (reservation system), etc.?

A: Everything will stay the same except the plug-ins/connectors b/w our "GIS module" vs a hosted LBS service

LBS middleware

LBS middleware from:	Autodesk LocationLogic	Telcontar ODS	ESRI Tracking Server?	MapPoint Mobile Location Server (MLS)	Oracle Db 10g Locator Spatial	MapInfo mAware	
Platform / Application Server Support	BREW, J2ME, WAP, HTML, metaspeng (SMS), J2EE	BREW		Microsoft	J2EE		Comments: Also works with WIF provided
DB Server				SOL Server 2000			Comments: The BREW platform's ability to support geoOne, voice capabilities and client side mapping makes it the logical platform to interface with Telcontar's location-based software solutions.
Hardware	Sun Solaris Server, BEA WebLogic, Oracle Spatial						Comments: SDK is both
API	Java and XML API (HTTP/HTTPS)		XML API (HTTP & SOAP)	SOAP/XML	J2EE 1.4 Web Services, XML		Comments: BREW supports
Network Service Integration / Plug-ins				Sprint, Bell Mobility, O2, TelcelSonera, Teydo (location aggregator)			Comments: Works with Java, J2ME, .NET, C++ and more
							Comments: XML web Services compliant with OMA and OpenLS
							Comments: No SOAP
Billing & Reporting	Y						Comments: Billing records are generated for both platform and application level operations.

Features/Component							Comments: This includes rendering?
Route Service	Y (OpenLS)					Y	Comments: LBS middlewares provide event notifications. Subscriptions can be configured to keep track of how and when to notify a subscriber of an event that takes place. For example, a subscription may be configured to send a notification via SMS when the driver is near or has reached the pickup location and wait for the passenger.
Directory (POI) Service	Y (OpenLS)						Furthermore, LBS middlewares provide the targeted functions for managing and configuring subscriptions that respond to events generated from multiple sources. Events may be triggered from dynamic content such as real-time traffic information updates.
Geocoding	Y (OpenLS)					Y	
Reverse Geocoding	Y (OpenLS)						
Map Service	Y (OpenLS)					Y (WMS)	
Tracking Service	Y (OpenLS)						
Event/Alert Service	Y						
Proximity Searches							
Type of Mobile	J2ME, BREW				SmartPhone, PDA/PC		Comments: Is part of any of the above?
Pricing / Fee					\$6,500 annual (includes 15,000 positions)		Comments: Some users use the LBS platform by deploying it themselves. Others use the hosted LBS web services.
Clients/Users	Disney Mobile	Apple, Networks In Motion, TelexNav (Web, Ask.com, Google, Yahoo), Rich Map Engine for Motorola's UK TrafficMaster for Smartnav		Teydo MobSPOT, Sprint, Bell Canada, Cuball	Autodesk LocationLogic, Inetgraph Inetnav/here, Telcontar DDS, Teydo FleetOnline & MobSPOT		Comments: Disney Mobile has selected Autodesk to be their LBS partner to enable for new suite of cellular services with location-enabled applications. Disney Mobile will launch its services in June 2006. A division of Disney Internet, the company will operate as a Mobile Virtual Network Operator (MVNO) and will be leasing a frequency spectrum from Sprint (CDMA 1xEVDO).
					NTT DoCoMo, iPhone, KDDI, Hutchinson 3G		Comments: In the UK - over 8,000 registered companies (2004). Teydo BV is a leading LBS provider that owns and operates the MobSPOT™ Location Based Service aggregator platform with global reach for Positioning, SMS and billing.

3.1 Autodesk LocationLogic

3.2 Telcontar DDS

3.3 ESRI

3.4 Microsoft MapPoint Mobile Location Server (MLS)

MLS API is based on SOAP Web services, so it interoperates with many different client platforms (i.e., .NET programming languages, Java or Perl.)

Three providers that work with mobile operator networks are available with MapPoint Location Server:

- Sprint:

Comments: Teydo LocationXS "web service" (webloc).

This is used by Teydo's partners serving the LBS. Location XS is built on Teydo's FleetOnline web service and TMS.

Comments: Internal LBS based service helps fleet owners control their fleets and reduce operational costs.

Comments: FleetOnline has 15,000 subscriptions (2005).

Comments: route delivery drivers with point-to-point directions and maps for all of their routes and reduces the response time and delivery costs for special deliveries by dispatching drivers.

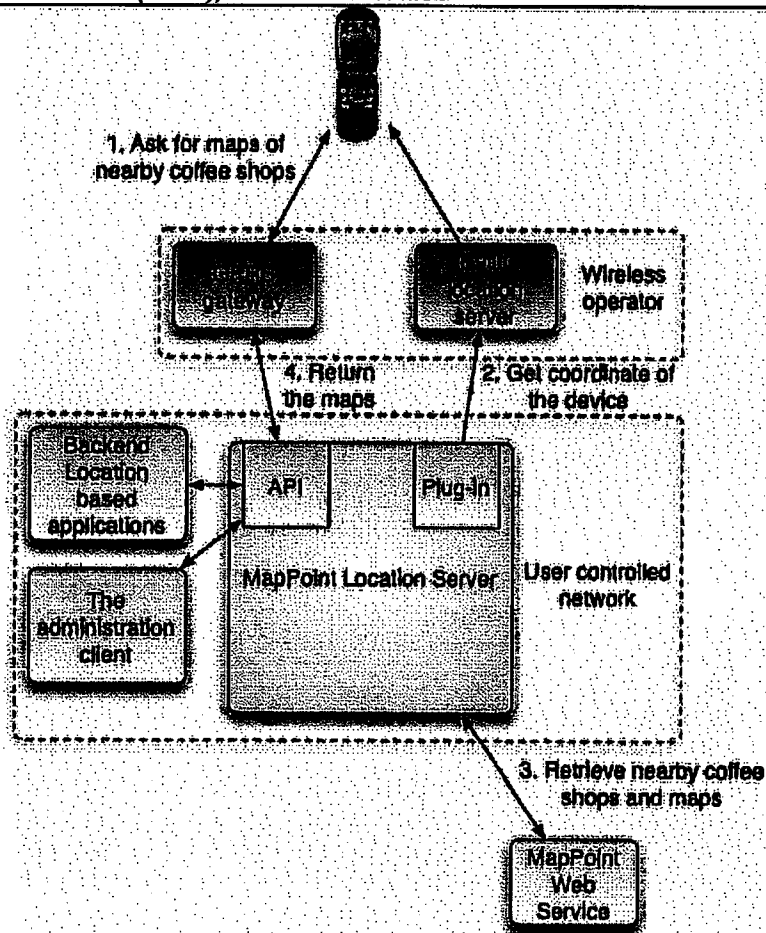
Comments: LBS aggregation platform.

Comments: To use MLS in commercial settings, a list of phone numbers that a particular MLS installation is authorized to locate needs to be specified (under a contract) with the carrier.

- **Bell Mobility (Canada):** A location provider that works with the Bell Mobility network.
- **Teydo (Europe):** A location, SMS notification, and billing provider that works with the Teydo network

MLS supports plug-ins for Sprint in the U.S. and for Bell Mobility in Canada

A GIS needs to be used along with MLS to translate the coordinate to a street address, correlate it with points of interest, and render maps. Microsoft provides the MapPoint Web Service (MWS), a hosted GIS solution.



Comment: MWS is used with MLS so that we won't have to host the data, maintain it, update it, etc...

Q: Do we want to host our data?
OK, use a web service like MWS, ArcWeb, etc to tap into the data?
If the latter, then it might be better to host the entire LBS solution with map data.

Figure: MLS Request Process – A user sends a request to MLS from a Smartphone. MLS then requests user location from the wireless carrier, uses the location to find

nearby coffee shops, and returns the highlighted map (using a GIS, the MapPoint Web Service) to the Smartphone Source: Microsoft

3.4.1 Tedyo MobiSPOT (Europe)

Tedyo is..

MobiSPOT is connecting the MapPoint Mobile Location Server (MLS) to all European GSM operators for LBS positioning and SMS messages. Any developer or partner of Microsoft MapPoint has access to the MobiSPOT platform using the standard API which comes with MLS.

MobiSPOT connector enables any MLS partner to connect to more than 100 million GSM subscribers

The mobile-operator independent API is mapped to individual mobile operators through the MobiSPOT location provider

Tedyo has appointed Fresca to host and manage their system for network performance reasons.

MobiSPOT API connection licensing

- Waterfall-style pricing model.
- No upfront access fees.
- Annual licensing fees including 15.000 position requests.

Transaction-based Fees

For example, Tedyo (European aggregator for LBS to GSM operators) bills the API licensee on a monthly basis for number of transactions used by their customers. Transactions are billable if they use any of the following MobiSPOT Web Service functionalities:

- Location requests,
- SMS messages (both MT and MO),
- Premium SMS, and
- Credit card transactions.

API payment options

Payment of executed transactions is on monthly basis following the end of each month. Partners can always check their traffic through the online Tintis web monitor. If required Tedyo can collect the payments from customers through Premium SMS and/or credit card.

When using the Premium SMS reversed billing option within MobiSPOT end users are charged for all transactions on their

Comment: So what?
Is the Tedyo platform similar to DIP?

Their LBS is independent and provided by different LBS providers (Microsoft, etc).

Tedyo aggregates location from the GSM providers and sends them to the LBS providers.

We don't need to do location aggregation because Sprint has an open location API

Comment: WHY? Too much of operation costs?

monthly mobile phone bill from their operator. The out payment is on average 75% across all GSM operators. The out payment term is 60 days after the end of each month.

API Credit Card out payment

When using the Credit card billing option within MobiSPOT end users are charged for all transactions on their credit card. End users can either top up their account or you can define a fixed monthly subscription fee which is charged automatically. The out payment is on average 95% across all credit cards. The out payment term is 30 days after the end of each month. For a detailed cost per transaction please contact us.

MobiSPOT Location Server Pricing Model

Platform Access Fees: US \$ 6,000 annually including SLA fees, Operator Connection fees and 15,000 position requests.

Service Level Agreement / Operator Connection Fees: For Partners whom prefer a monthly charge the following fees are applicable US \$ 350 monthly (included in Platform access fee). New Teydo operator connections for LBS are automatically accessible for all partners.

3.5 Oracle Db 10g

Oracle Locator

Oracle Locator is a feature of Oracle Database 10g. Oracle Locator provides native data management (spatial object type storage), query, analysis, and indexing of location data, accessible through standard SQL. These limited features are sufficient to support most LBS applications, making the Oracle Database 10g a platform that supports LBS.

Oracle Spatial

Oracle Spatial extends the core location features included in every Oracle database with Oracle Locator. Its advanced data manipulation and spatial analysis features include buffer generation, spatial aggregates, area and length calculations, and linear referencing.

Oracle Spatial and Oracle Locator manage location data in a native type within Oracle Database 10g.

Oracle Spatial and Oracle Locator have been adopted as the preferred location platform by leading GIS and LBS vendors.

Oracle Spatial is an option for Oracle Enterprise Edition that provides advanced spatial features to support high-end GIS and LBS solutions. Oracle Spatial is a spatial data engine for complex spatial/GIS solutions (i.e., spatial buffer functions directly in the database server.)

Oracle Locator was developed as a spatial database backend to be used in combination with 3rd party GIS tools, or where limited spatial operators and a limited set of spatial functions are required from the database (e.g., enterprise and wireless location services). Oracle Locator is well suited to carry out the relatively simple spatial operations required by wireless LBS.

Comments: As a LBS platform or does it need to tap into LBS provider services?

Can we host and serve our own data via Oracle Locator in a cell phone?

Comments: Is Oracle Spatial for GIS and Oracle Locator for LBS.

NTT DoCoMo, JPhone, KDDI, Hutchinson 3G already use Oracle for their LBS solutions. The J-Phone J-Navi LBS applications were written in Java and run on Oracle Spatial. Java Server scripts running in the database and mid-tier provide lightweight and scalable geocoding, map rendering, and location capability. This particular deployment runs nearly all of its LBS functions directly from the spatial database and is able to achieve scalability requirements of 30,000 user sessions per hour. The results is the ability to deliver over 1 million color vector and raster maps per day to a new class of GPRS and UMTS enabled multimedia handsets. The average query processing is less than 200ms, and average download time is two seconds. The J-Phone deployment, in combination with partner technologies and services, leverages performance-enhancing features like caching, parallelism, partitioning, and high availability. This is particularly relevant to wireless location-based applications where new application components may need to be created and enhanced regularly to differentiate service offerings.

Oracle MapViewer is an Oracle Application Server Java component and JDeveloper extension used for map rendering (using a J2EE service) and viewing geospatial data managed by Oracle Spatial or Locator. MapViewer provides services and tools that hide the complexity of spatial data queries and map rendering. MapViewer is designed to integrate with Location-Based services and applications.

Oracle Spatial is available on Oracle Enterprise Edition. It provides advanced spatial functions (including area, buffer, centroid calculations.)

Oracle 10g has built-in, standards-based locator capabilities to store, index, and manage location content and query location relationships using the power of the database. Oracle 10g Spatial adds spatial information management features such as:

- a network data model,
- topology (needed for proximity and search queries),
- GeoRaster support, and
- built-in geocoding

In conclusion, Oracle Locator was targeted at LBS and includes basic geometry types, indexing and geocoding. In order to provide the higher end functionality, a 3rd party LBS middleware is needed.

Oracle brings the performance, scalability, and manageability needed for LBS.

Oracle IAS LBS Platform

Oracle9iAS Wireless is a platform for mobile application development and deployment. It addresses the specific location-related requirements of mobile applications, such as location acquisition, provider selection, mobile positioning and privacy, and geo-fencing (region modeling).

Oracle9iAS Wireless simplifies access to a variety of location based service providers offering services such as geocoding, driving directions, yellow pages, and mapping. New LBS features were recently incorporated into Oracle9iAS like: OpenLS XML interfaces, location privacy management, friend finder infrastructure, map rendering tool, and region modeling utilities. These features work with the leading 3rd party mapping, geocoding and routing tools to bring the necessary reliability, security, and scalability for wireless and enterprise LBS applications

NOTE: Oracle9iAS is not an LBS platform on its own, but taps into LBS platforms / services, such as MapInfo's miAware LBS platform or Microsoft hosted service, MapPoint, which can be used as a content provider for LBS.

Comment: The LBS platform provides a quick and easy way for developers to add capabilities to communicate with new services. This is an example of how you could setup your own geocoder and write a geocoder proxy which would query it for information. This example uses the Oracle 10g database as a geocoder provider.

Comment: Oracle has OpenLS XML

Oracle and MapInfo

Location Gateway: Oracle 9i AS Wireless

Application Platform: Oracle 9iAS Wireless

Geospatial Platform: MapInfo miAware

LBS Applications: A wide variety of off-the shelf, completely customizable and 3rd party applications.

Comment: (This is similar to ESRI's ArcWeb sample app that we are using for the prototype)

Teydo MobiSPOT (uses Oracle)

The MobiSPOT platform enables partners to access LBS services through one API. Runs on Oracle database and application server technology and can handle up to 20 requests per second.

Comment: And Geodas Mobile Solutions is the integrator of GIS platform. Geodas is a report on Oracle

Comment: That is not enough for our needs

3.6 MapInfo miAware